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OF THE

MEDICAL SCIENCES.

No. XXVIII.—Oct. 1847. 19

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TO READERS AND CORRESPONDENTS.

We have received a note from Dr. C. W. Pennock, expressive of much regret that, whilst acknowledging the aid given him by the Resident Physicians of the Philadelphia Hospital, Blockley, in reference to the observations *On the Pulse and Respiration of the Aged*, (published in the July number of this Journal,) the name of Dr. Davis, of Virginia, who was attached to the hospital at the time of the investigation alluded to, and to whose assistance Dr. Pennock "feels deeply indebted," should have been omitted.

Our last Number (p. 127) contained a paper by Dr. George K. Pardee, of Ohio, describing some cases which he supposed were examples of scarlatina, but which, by others who saw them, were believed to be produced by poisoning. Since the publication of that paper, we have received a visit from Dr. Alex. Fisher, of Western Star, Summit Co., Ohio, who states that all these cases, except the last, occurred in his practice, and he has furnished us with his notes of the cases, and of the post-mortem appearances, which differ very materially from the account given by Dr. Pardee. He also asserts that scarlatina did not subsequently prevail epidemically in the town.

Dr. Fisher has recently transmitted to us, at our request, some of the berries, such as were eaten by the subjects of the cases, and which prove to be, not the fruit of the *Solanum dulcamara*, but of the *Celastrus scandens*.

These berries we submitted to our friend, Dr. R. E. Griffith, an accomplished botanist, who has sent us the following note respecting them.

Dear Hays:—

The berries you placed in my hands, are those of the Celastrus scandens, a climbing plant, belonging to Celastrasea.—5—1 or, more properly, 5—3 sex. syst., as the style is a compound one, having 3 stigmas. It is called, in different parts of the country, Bitter sweet, Wax-work, Red root, &c. It has, somewhat, the properties of the solanum dulcamara, being emetic, discutient, diuretic, and somewhat narcotic; it has some reputation in domestic practice, and is also employed by the Thompsonians. (See Griffith's Med. Bot., 219.) Several other species are stated by March and Delens to be active. There is no doubt that these berries are capable of inducing unpleasant symptoms, as those of the Enonymus, a closely allied genus, are eminently purgative, emetic, &c. Yours, truly,

R. E. Griffith.

The following works have been received:

Report on the Fever at Boâ Vista, by Dr. McWilliam. Presented to the House of Commons, in pursuance of their address of the 16th March, 1847. London, pp. 112, folio. (From the Author.)

Letter addressed by Sir William Pym to the Lords of the Council, relative to a report on the fever of Boâ Vista, by Dr. McWilliam. Presented to the House of Commons, in pursuance of their address of May 14th, 1847. London, pp. 16, folio. (From Dr. McWilliam.)

A System of Surgery, by J. M. Chelius, M. D., Prof. of General and Ophthalmic Surgery. Translated from the German, and accompanied with additional notes and observations. By John F. South, late Professor of Surgery to the Royal College of Surgeons of England: 3 vols. 8vo. Philada.: Lea and Blanchard, 1847. (From the Publishers.)

On Diseases of the Skin. By Erasmus Wilson, M. D., Lecturer on Anat. and Phys., &c. &c. Second American, from the second London edition. Philada.: Lea and Blanchard, 1847. (From the Publishers.)

Lectures on the Principles and Practice of Physic; delivered at King's College, London. By Thomas Watson, M. D., F. R. C. P., &c. &c. Third American, from the last London edition, revised, with additions, by D. Francis Condie, M. D., &c. &c. Philada.: Lea and Blanchard, 1847. (From the Publishers.)

The Mutations of the Earth; or an outline of the more remarkable physical changes of which, in the progress of time, this earth has been the subject, and the theatre: including an examination into the scientific errors of the author of the Vestiges of Creation. Being the Anniversary discourse for 1846, delivered in the Chapel of the University, before the Lyceum of Natural History of New York, and printed at the request of the Society. By John Augustine Smith, M. D., first Vice President of the Institution New York, 1846. (From the Author.)

Principles of Human Physiology, with their chief applications to Pathology, Hygiène, and Forensic Medicine. By William B. Carpenter, M. D., F. R. S., Fullerian Prof. of Phys. &c. &c. &c. Third American, from the last London edition. With notes and additions, by Meredith Clymer, M. D., Consulting Physician to the Philadelphia Hospital, &c. &c. &c. With three hundred and seventeen wood-cuts, and other illustrations. Philada., Lea and Blanchard, 1847.

On the Pathology and Treatment of Dysentery; being the Gulstonian Lectures delivered at the College of Physicians, in Feb. 1847. By Wm. Baly, M. D., Phys. to the Milbank Prison, &c. &c. London, 1847. (From the Author.)

Discourses on Medical Education, and the Medical Profession. By John Ware, M. D., Hersey Professor of the Theory and Practice of Physic in the University of Cambridge. Boston, 1847. (From the Author.)

An Address delivered at the Castleton Medical College, introductory to the autumnal session of 1847. By Wm. Sweetser, M. D., Professor of the Theory and Practice of Medicine. Published by the class. Troy, 1847. (From the Author.)

Handbuch der Allegemeinen und Speciellen Chirurgie. Von Dr. A. Wernher, Prof. de Chirurgie und pathologischen Anatomie. 3 and 4 heft. Giesen, 1846. (From Dr. Oppenheim.)

Reisehandbuch für Aertze und Naturforscher, zugleich als Versuch eines Wörterbuchs der medizinischen Geographie. Von Wilhelm Stricker, M. D. Erlangen, 1845. (From Dr. Oppenheim.)

Andeutungen über Ventilation eine andrede an gebildete Richtarzte. Von G. Sieveling, M. D. Hamburg, 1846. (From Dr. Oppenheim.)

Lectures on subjects connected with Clinical Medicine. By P. M. Latham, M. D. Second edition. Philada., Barrington and Haswell, 1847. (From the Publishers.)

Annual Report of the Regents of the University of the State of New York. Made to the Legislature, April 24th, 1847. Albany, 1847. (From Dr. T. R. Beck.)

Proceedings of the Medical Convention assembled in Frederick, June 2d, 1847, with the Constitution and By-Laws of the Medical Society of Frederick County, auxiliary to the Med. Chirurg. Faculty of Maryland. Frederick, 1847.

Introductory Lecture delivered to the Medical class of the Bershire Medical Institution, Aug. 5th, 1847. By Prof. DEWEY. Pittsfield, 1847. (From the Author.)

Review of Dr. M. Gay's statement of Dr. Charles T. Jackson's claims to the discovery of the inhalation of Sulphuric Ether, as a preventive of pain. By J. B. S. JACKSON, M. D. Boston, 1847. (From the Author.)

On the Pathological and Physiological effects of Ethereal Inhalation. With an appendix, containing an additional case, and experiments. By BUCKMINSTER BROWN, M. D. Boston, 1847. (From the author.)

Some account of the Letheon: or who is the discoverer? By EDW. WARREN. Third edition, revised and enlarged. Boston, 1847. (From the Author.)

Annual Circular and Catalogue of the Medical Department of the University of Buffalo. Buffalo, 1847.

Catalogue of the Trustees, Faculty, and Students of the Medical College of the State of South Carolina, Session 1846–7. Charleston, 1847.

Catalogue and Annual Announcement of Willoughby Medical College of Columbus, 1847.

Eighth Annual Announcement of the Baltimore College of Dental Surgery. Baltimore, 1847.

The Reply and Comments of Dr. BYBEE to the Charges and Specifications of six of the Memphis Medical College. Memphis, 1847.

The following Journals have been received in exchange:—

Zeitschrift für die gesammte Medicin, herausgegeben. Von F. W. OPPENHEIM. Aug., Sept., Oct., Nov., Dec., 1846. Jan., Feb., March, April, May, 1847.

Adolph Hencke's Zeitschrift für die Staats-arzneikunde fortgesetzt. Von Dr. A. SIEBERT, Bd. 52, heft 3 and 4, and Bd. 53, heft 1 and 2.

Klinick. Tijdschrift voor Wetenschappelijke Geneeskunde Uitgegeven door Dr. C. GOBEE. 1 Deel, 1, 2, 3, 4, 5, 6 stuck. 2 Deel, 1, 2, 3, 4 stuck.

Nieuw Archief voor Binnen-buitentandsche geneeskunde in haren geheelen omvang door Dr. J. VAN DEEN. 1 Deel, 5 stuck.

The Edinburgh Medical and Surgical Journal. July, 1847.

The Medico-Chirurgical Review. July, 1847.

The British and Foreign Medical Review. Edited by JOHN FORBES, M. D. July, 1847.

The London Medical Gazette. June, July, Aug., 1847.

The Retrospect of Medicine: Being a half-yearly Journal, containing a retrospective view of every discovery and practical improvement in the Medical Sciences. Edited by W. BRAITHWAITE, Jan. to June, 1847.

The Half-Yearly Abstract of the Medical Sciences: Being a Practical and Analytical Digest of the contents of the principal British and Continental Medical works published in the preceding six months. Together with a series of critical reports on the progress of medicine and the collateral sciences during the same period. Edited by W. H. RANKING, M. D. Jan. to June, 1847.

Dublin Medical Press. June, July, August, 1847.

Provincial Medical and Surgical Journal. Edited by R. J. N. STREETEN, M. D., F. R. S. June, July, August, 1847.

Medical Times. June, July, August, 1847.

The Dublin Quarterly Journal of Medical Science. May, 1847.

The British American Journal of Medical and Physical Science. Edited by Archibald Hall, M. D. July, August, Sept., 1847.

Australian Medical Journal. Sidney, Nov. 2d, 1846.

Southern Medical and Surgical Journal. Edited by Paul F. Eve, M. D., July, Aug., Sept., 1847.

The American Journal of Science and the Arts. Conducted by Prof. B. Silliman, B. Silliman, Jr., and James D. Dana. July, Sept., 1847.

Illinois and Indiana Medical and Surgical Journal. July, Aug., Sept., 1847.

The Western Journal of Medicine and Surgery. Edited by Drs. Drake, Yandell, and Colescott, July, Aug., Sept., 1847.

The Missouri Medical and Surgical Journal. Edited by Thomas Barbour, M. D., and A. J. Coons, M. D. July, Aug., Sept., 1847.

The New Orleans Medical and Surgical Journal. Edited by Drs. Carpenter, Fenner, Harrison, and Hester. July, Sept., 1847.

The New York Journal of Medicine, and the Collateral Sciences. Edited by Charles A. Lee, M. D. July, Sept., 1847.

St. Louis Medical and Surgical Journal. Edited by Drs. Linton and McPheeters. Vol. V., Nos. 1 and 2.

The Medical Examiner and Record of Medical Science. Edited by R. M. Huston, M. D. July, Aug., Sept., 1847.

The American Journal of Pharmacy. Published by authority of the Philada. College of Pharmacy. Edited by Joseph Carson, M. D., &c. Aug., 1847.

Buffalo Medical Journal and Monthly Review of Medical and Surgical Science. Edited by Austin Flint, M. D., July, Aug., Sept., 1847.

The American Journal and Library of Dental Science. June, 1847.

The Annalist; a record of Practical Medicine, in the city of New York. Edited by Wm. C. Roberts, M. D. July, Aug., Sept., 1847.

The Western Lancet and Medical Library. Edited by L. M. Lawson, M. D. July, Sept.

CONTENTS

OF THE

AMERICAN JOURNAL

OF THE

MEDICAL SCIENCES.

NO. XXVIII. NEW SERIES.

OCTOBER, 1847.

ORIGINAL COMMUNICATIONS.

MEMOIRS AND CASES.

ART. PAGE

I. Statistics in Midwifery. By Jno. G. Metcalf, M. D., M. M. S., Member of the American Statistical Association of Mendon, Massachusetts. - - 295

II. A very early Human Ovum, presenting the ununited folds of the blastoderma about to form the amnios. By Myddleton Michel, M. D., Lecturer on Anatomy and Physiology, Charleston, South Carolina, [with a plate.] 330

III. Isopathia; or, the Parallelism of Diseases. By John M. B. Harden, M. D., of Liberty County, Georgia; Correspondent of the Academy of Natural Sciences, Philadelphia, &c. - - - - - - 339

IV. Amputation above the Shoulder-joint. By David Gilbert, M. D., (of Gettysburg, Pa.:) Prof. of Surgery in Medical Department of Pennsylvania College, Philadelphia. - - - - - - - - 360

V. Osteo-Sarcoma of the Lower Jaw. Removal of the body of the bone without external mutilation. By J. Marion Simms, M. D., of Montgomery, Ala. - - - - - - - - - 370

VI. Observations on Yellow Fever. By E. H. Kelly, M. D., of Mobile, Ala. 373

VII. Researches upon the Structure and Functions of the Ciliary Processes. By R. Fraser Michel, M. D., Charleston, S. Carolina. - - - 393

VIII. Case of Partial Occlusion of the Os Uteri, during the third difficult labour of the Patient. Incision of the Os Uteri. Read before the Boston Society for Medical Observation, October 19th, 1846. By Charles E. Buckingham, M. D. - - - - - - - - 400

IX. Radical Cure of Hernia by including the Neck of the Sac and External Ring in a Lead Ligature. By J. C. Nott, M. D., of Mobile, Ala. - - 402

X. Case of Erysipelas Phlegmonoides. By E. J. Bee, M. D., Assistant Surgeon, U. S. Navy. - - - - - - - 405

XI. Case of William Freeman, the Murderer of the Van Nest Family. By Blanchard Fosgate, M. D., of Auburn, N. Y. - - - - 409

REVIEW.

XII. Report on the Fever at Boâ Vista. By Dr. McWilliam. Presented to the House of Commons, in pursuance of their Address of the 16th of March, 1847. London, 1847. Folio, pp. 112.

Letter addressed by Sir William Pym to the Lords of the Council, relative to a Report on the Fever at Boâ Vista, by Dr. McWilliam. Presented to the House of Commons, in pursuance of their Address of May 14, 1847. London, 1847. Folio, pp. 16. - - - - - - 415

BIBLIOGRAPHICAL NOTICES.

ART. PAGE

XIII. Practical Observations on some of the Diseases of the Stomach and Alimentary Canal. By James Alderson, M. D., F. R. S., Fellow of the Royal College of Physicians; late Senior Physician to the Hull General Infirmary, &c. London, 1847: 8vo. pp. 215. - - - - - - 429

XIV. 1. Annual Report of the Medical Superintendent of the Temporary Provincial Lunatic Asylum, at Toronto, (Canada West,) from April 1st, 1846, to March 31st, 1847. Toronto, 1847.

2. Thirtieth Annual Report of the State of the Asylum for the Relief of Persons deprived of the Use of their Reason. Philadelphia, 1847.

3. Report of the Superintendent of the New Hampshire Asylum for the Insane, for 1846, 1847. Concord, 1847.

4. Twenty-sixth Annual Report for the Bloomingdale Asylum for the Insane. New York, 1847. - - - - - - - - - 436

XV. Illustrations of Medical Botany; consisting of Coloured Figures of the Plants affording the important articles of the Materia Medica, and descriptive Letter-Press. By Joseph Carson, M. D., Professor of Materia Medica in the Philadelphia College of Pharmacy; Member of the American Philosophical Society of the Academy of Natural Sciences of Philadelphia, Fellow of the College of Physicians, &c. &c. The Drawings on Stone, by J. R. Colen, No. 2. Philad., Robert P. Smith, 1847: 4to. - - - 439

XVI. Fifth Annual Report to the Legislature relating to the Registry and Returns of Births, Marriages and Deaths in Massachusetts. For the year ending April 30th, 1846. By John G. Palfrey, Secretary of the Commonwealth. - - - - - - - - - 439

XVII. Summary of the Transactions of the College of Physicians of Philadelphia. From Dec. 1846 to April 1847 inclusive: pp. 72, 8vo. - - 440

XVIII. Report of the Committee on Medical Societies and Medical Colleges relative to the Bill proposing the establishment of an Asylum or School for Idiots, &c. - - - - - - - - - 442

XIX. Water *versus* Hydropathy; or an Essay on Water, and its true relations to Medicine. By Henry Hartshorne, M. D. Ἡ δὶ πιχνὴ μαχρή. 12mo. pp. 131: Philadelphia, 1847. - - - - - - - 444

XX. Lectures on the Principles and Practice of Physic; delivered at King's College, London. By Thomas Watson, M. D., F. R. C. P., &c. &c. Third American from the last London edition. Revised, with additions, by D. Francis Condie, M. D., Lec. Coll. Phys., &c. &c. Philadelphia: Lea and Blanchard, 1847: pp. 1040, 8vo. - - - - - - 445

XXI. Essays, Anatomical, Zoological, Surgical, and Miscellaneous, reprinted from the Philosophical Transactions, Transactions of the Medico-Chirurgical Society of London, Dublin Philosophical Journal, Dublin Hospital Reports, Reports of the British Association for the Advancement of Science, and the Dublin Medical Press. By Arthur Jacob, M. D., F. R. C. S. J., Professor of Anatomy and Physiology, and Lecturer on Comparative Anatomy in the Royal College of Surgery in Ireland, &c. &c. Dublin, 1845: pp. 174. 8vo. Plates IV. - - - - - - - - - 445

XXII. On Diseases of the Skin. By Erasmus Wilson, F. R. S., Consulting Surgeon to the St. Pancras Infirmary, Lecturer on Anatomy and Physiology, &c. &c. Second American, from the Second London edition - - 446

XXIII. Outlines of the Veins and Lymphatics: with short Descriptions. Designed for the use of Medical Students. By John Neill, M. D., Demonstrator of Anatomy in the University of Pennsylvania, &c. &c. Philada.: Ed. Barrington and Geo. D. Haswell: 1847, pp. 29. Plates VIII. - - 446

QUARTERLY SUMMARY

OF THE

IMPROVEMENTS AND DISCOVERIES IN THE MEDICAL SCIENCES.

FOREIGN INTELLIGENCE.

Anatomy and Physiology.

1. Death from an impermeable covering of the Skin. - - - 447
2. On the Function of the Red Corpuscles of the Blood, and on the Process of Arterialization. By Geo. Owen Rees, M. D. - - 447
3. On the entrance of Insoluble Substances from the Intestinal Canal into the Blood-Vessels. By Prof. Oesterlen. - - - - - 448
4. Researches on the Nervous System. By M. C. Robin. - - 449

Organic Chemistry.

5. Nature of the Colouring Matter of the Bile. By M. Blondlot. - 450
6. Colouring Matter of the Bile. By Polli. - - - - - 451
7. Detection of Mercury in the Pus from a Bubo. - - - - 451

Materia Medica and Pharmacy.

8. Citrate of Magnesia as a Purgative. By M. Rage Delabarre. - 451
9. Dressing of Blisters. By Dr. D. Maclagan. - - - - - 452
10. Cusparia or Angustura. By Robert Dick, M. D. - - - 453
11. On the Properties of the Iberis Amara. By Dr. Silvester. - - 453
12. Electric Moxa. By Dr. Golding Bird. - - - - - - - 454
13. Di-Arsenite of Quinine. By Dr. Kingdon. - - - - 454

Medical Pathology and Therapeutics and Practical Medicine.

14. Efficacy of Compression of the Epigastrium for the cure of Hiccup. By M. Rostan. - - 455
15. Scurvy. By Dr. O. B. Bellingham. - - - - - - 455
16. On the Varieties of Headache. By Dr. Samuel Wright. - - 459
17. On the Semeiology of the Tongue. By Samuel Wright, M. D. - - - - - - 460
18. On the Use of Opium in Inflammation. By W. H. Ranking, M. D. - - - - - - 461
19. On Subacute Inflammation of the Kidney. By John Simon, Esq. 463
20. Albuminous Urine produced by the use of Cantharides. By M. Bouillaud. - - - - - 463
21. On the Relations of Rheumatism and Chorea, and their Treatment. By Dr. Begbie. - - 464
22. A few Hints on Constipation. By Dr. Robert Dick. - - - 465
23. Case of Jaundice — Fungous Growth round the Orifice of the Ductus Choledochus—Dilatation of the Hepatic Ducts in the Liver. By Dr. Stokes. - - - - - 466
24. Obliteration of the Spermatic Ducts. By M. Gosselin. - - 467
25. Sulphuric Ether in the Treatment of Intermittent Fevers. By Dr. Challeton. - - - - 468
26. Galvanism in Aphonia. - - 468
27. Effects of Electricity on the Human Organism. By M. Pallas. 468
28. Benzoate of Ammonia in Gout. By Dr. Seymour. - - - 469
29. Binoxide of Mercury in Skin Diseases. By M. Ibreisle. - 469

PAGE

30. Treacle as a Local Remedy for Rheumatism. By Mr. Vines. - 470
31. Influence of Quinine on the Volume of the Spleen in Ague. By M. Valleix. - - - - - 470
32. Treatment of Inflammatory Induration of the Cervix Uteri by deep Cauterization with Potassa Fusa. By Dr. Simpson. - - 471
33. Death of a New-Born Child from Hypertrophy of the Thyroid Gland. - - - - - - 471
34. Case of Ischuria Neonatorum. By Alois Bednar. - - - 472

SURGICAL PATHOLOGY AND THERAPEUTICS, AND OPERATIVE SURGERY.

35. Influence of the Laws of Gravity on Circulation and Local Inflammation. By Prof. Gerdy. - 472
36. Wound of the Brain—Recovery. By M. Gintrac. - - - - - 473
37. Extensive Lacerated Wound of the Rectum and Bladder, produced by the Leg of a Chair. By Mr. Prescott Hewett. - - 475
38. Tetanus following a lacerated Wound of the Cornea. By George Pollock, Esq. - - 475
39. Treatment of Dissection-wounds. By Dr. Hargraves. - 476
40. New Mode of bandaging Wounds and Stumps. By M. Baudens. - - - - - 476
41. Fracture of the Upper Extremity of the Humerus traversing the Bicipital Groove, and detaching the greater Tubercle. By Robert Smith, Esq. - - - 477
42. Dieffenbach's new and successful Operation for Pseudarthrosis. By Dr. J. S. Bushnan. - - 477
43. Vertical Dislocation of the Patella (de champ). By M. Payen. 479
44. Partial Dislocation of the Humerus and of the Femur. - - 481
45. Treatment of Chronic Cystitis by injections of a solution of Nitrate of Silver. By Dr. Robert L. Macdonnel. - - - - - 481
46. Successful Extirpation of an Ovarian Tumour. By Dr. Woyeikowski. - - - - - 483
47. Vesico-vaginal Fistula. By MM. Roux, Velpeau and Lallemand. - 484
48. New Method of Treatment for Prolapsus Ani. By T. G. Hake, M. D. - - - - - - 487
49. Cold Water in cases of severe Burns. By Dr. Küsten. - - 488
50. Treatment of Burns with Treacle. By Mr. Bulley. - - 489
51. Treatment of Erysipelas by Linear Blisters. By M. Piorry. - 489
52. Hypertrophy of the Septum Nasi successfully treated. By M. Brulet. - - - - - - 489
53. Sublingual Tumour.—Salivary Calculus.—Dilatation of Wharton's Duct. By M. Robert. - 490
54. Tracheotomy in Croup. By M. Guersant. - - - - - - 491
55. Ascites cured by the Iodine Injection into the Peritoneal Cavity By M. Leriche. - - - 491
56. Purulent Infection. By M. Sedillot. - - - - - - 491

OPHTHALMOLOGY.

57. Treatment of Scrofulous Inflammation of the Eye. By Prof. Jacob. - - - - - - 492
58. Malignant Diseases of the Eye. By Dr. Dalrymple. - - - 496
59. Case of Encephaloid Disease of the Brain, inducing Amaurosis. By Mr. J. Dalrymple. - - 496
60. Structure of Conjunctiva. By Arlt. - - - - - - 497

MIDWIFERY.

61. Case of Delivery without operative aid, through a pelvis extremely deformed by Malacosteon. By Prof. Simpson. - - 497
62. Nature of the Membrana Decidua. By M. Coste. - - - 502
63. Prevention of Abortion. By Dr. Griffin. - - - - - 503
64. Spontaneous Evolution. By Dr. Keiller. - - - - 503
65. Cases of Fatal Hemorrhage from the Umbilical Vessels in Infants. By Dr. Simpson. - - 504
66. Fatal Hemorrhage from the Umbilical Cord three days after Birth. By Dr. Keiller. - - 504

PAGE

67. Fungus, or Fungating Excrescences of the Umbilicus in Infants. By Dr. Simpson. - - 504

68. Albuminuria in Pregnant Women. By M. Devilliers. - - 505

Medical Jurisprudence and Toxicology.

69. New Test for Prussic Acid, and a simple method of preparing the Sulphocyanide of Ammonium. By Prof. Liebig. - - - 506

70. On the two varieties of Arsenious Acid. By M. Bussy. - 506

71. Infanticide. - - - - 507

72. Poisons of the Assamese. - 508

73. Bronzing of Confectionary. - 508

74. Case of poisoning by Turpeth Mineral. By Dr. Letheby. - 508

75. On the Essential Oil of Bitter Almonds. By R. B. Grindley. - 510

76. Ledoyen's Disinfecting Fluid. - 511

Ether Inhalation as a means of Annulling Pain.

§ 1. *Mode of Administering Ether, and Precautions to be observed.* - 512

77. Rules for its administration. - 512

78. Precautions for do. - - 512

§ 2. *Physiological Action of Ether.* - 513

79. Experiments illustrating the Effects produced by the Inhalation of Ether upon the lower Vertebrate Animals. By Holmes Coote, Esq., and Thomas Taylor, Esq. - 513

80. Influence of Ether on Respiration. By M. Ville. - - - 514

81. Morbid Appearances. - - 514

§ 3. *Employment of Inhalation of Ether in Surgical Practice.* - - 514

82. Ill Effects of Ether. By Mr. Copeman. - - - - 514

83. Injurious Effects of the Inhalation of Ether. By Dr. Pickford. 515

84. Injurious Effects of Ether Inhalation. - - - - - 517

85. Ether Inhalation in Tetanus. By Dr. W. H. Ranking. - - 518

§ 4. *Inhalation of Ether in Obstetrical Practice.* - - - - 518

86. Applicability. - - - 518

87. Application of Ether to Obstetric Practice. By Prof. Simpson. 519

88. Ether Inhalation in Midwifery Practice. By Dr. Simpson. - 520

89. Inhalation of Ether in Midwifery Practice. By Baron Paul Dubois. - - - - - 521

90. On the Employment of Ethereal Inhalation in Midwifery. By Prof. Siebold. - - - - 522

91. Influence of Ethereal Inhalation on the Uterine Contractions. - 525

92. Dr. Tyler Smith on the connection of Ether with the Physiology of Parturition. - - - 525

§ 5. *Present State of Opinion in regard to the use of Inhalation of Ether.* - - - - - 526

93. Present state of opinion in regard to the Inhalation of Ether. - 526

AMERICAN INTELLIGENCE.

Original Communications.

Report of Cases of Typhus Fever, observed at the Lazaretto, near Philadelphia. By F. W. Sargent, M. D. - - - - - 529

Operations for Femoral Aneurism. By Charles Bell Gibson, M. D. - 535

Case of Abscess of Bladder. By Laurence Turnbull, M. D. - 536

DOMESTIC SUMMARY.

On the Effects of Blisters on the Young Subject. By John B. Beck, M. D. - - - - - 538
Ligature of Primitive Carotid Artery. By Dr. H. F. Campbell. - 542
Surgical Treatment of Œdema of the Glottis. - - - - - 543
Animal Ligatures. By Dr. W. T. Wragg. - - - - - - 544

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ART. I. — *Statistics in Midwifery.* By JNO. GEO. METCALF, M. D., M.M.S., member of the American Statistical Association of Mendon, Massachusetts.

ALTHOUGH the word *statistics*, applied to medical subjects in a strict sense, only "relates to the detail of facts connected with the salubrity, mortality, &c., of different countries and situations," yet, in spite of the lexicographers, it has come to have a much more extensive *conventional* signification. In the study of disease it is understood to comprehend the collection, arrangement and comparison of the symptoms, methods of treatment, termination, localities, &c.; while in midwifery, it deals with the classification of the phenomena and results of parturition.

Notwithstanding the cry, long and loud, against the numerical method of observation, by the cotemporaries of its author, there can be little doubt that it has materially aided in the establishment of a greater certainty in diagnosis, and of more expeditious and surer means of cure. The fame of the chief of La Pitié, we imagine, will long outlive the attacks of his opponents, upon his recommendation to study disease by clinical observation; and far down along the history of the great medical commonwealth of the world, Louis will stand out upon its pages "clarum et venerabile nomen."

Books have been *written* upon the subject of midwifery from the periods of a remote antiquity; but before the invention of the art of printing, we shall, at once, perceive that whatever had been learned by the practitioners of our art, could never have been very widely diffused, and, consequently, that its progress must have been comparatively slow. Could the records of the Egyptian midwives, the essays of Cleopatra and Aspasia,

have been multiplied with the rapidity of modern art, who would doubt that the torculum volvens of Rhazes, or the rude forceps of Avicenna, had been arrived at some centuries earlier in the history of obstetrics? Could the author of the "Liber Divisionum" have set up a printing press in the city of Bagdad, who would stake his reputation as a prophet, that some Ambrose Paré had not conferred renown upon the metropolis of his country some cycles in advance of the Parisian reformer? Could Faust, or Caxton, or Wynkyn de Worde have flourished in the reign of the Caliphs, who would believe that the impellens and the almisdach of Albucasis had preceded, by almost the space of a thousand years, the finished instruments of a Smellie and a Baudelocque? Instead of waiting until the days of Edward the Second, John á Gaddesden had been gazetted as court physician in the times of the Saxon heptarchy, or commissioned as Surgeon-general in the army of the Norman Conqueror. Instead of procrastinating the publication of the *first printed* book, upon the subject of midwifery, until the middle of the sixteenth century, "The Byrth of Mankynde, or the Woman's Booke," would have had its title-page antedated at least five hundred years, and its imprimatur issued from Ispahan instead of London.

With the printing press, the steam engine, and the magnetic telegraph for his antagonists, who will dare fix limits to the march of improvement in this nineteenth century? Thanks to a Faust, a Watt and a Morse, nothing can arrest the onward progress of the arts of civilization and refinement. By the aid of their inventions, knowledge, no longer hid beneath the arbitrary technicalities of monkish Latin, or the impenetrable mysteries of Chaldean hieroglyphics, is sown broad-cast, almost without money and without price, through the whole circumference of the habitable globe. In these latter times, as if by the wand of the magician, labour is changed to pastime, space is annihilated, and thought is endowed with the attribute of omnipresence. In sixty days, discoveries, made upon the banks of the Delaware, may be exerting their beneficial influences, for the cure of the Hindoo, upon the banks of the Ganges. Every sail that whitens the ocean by day, and every steamship which kindles her beacon-fires by night, upon its broad expanse, are freighted with the interchange of free thought and opinion and experience. Paris and London have become our next door neighbours; and we feel as if the minds which are giving direction to the talent and industry of these brilliant foci of medical improvement were our familiar friends.

Having our lot cast in such pleasant places, and living amid such a flood of professional light, let us take heed that we do not treasure up for ourselves the scorn of posterity; by the exercise on the one hand, of that fatuous conservatism, which adopts no improvement because it is new; and, on the other, of that reckless spirit of the radical, which demands that we raze everything to the foundation before it deigns impart to us the knowledge of the superstructure it will rear in its stead.

"Nullius addictus jurare in verba magistri," should be the motto of every seeker after medical truth. Nothing should be adopted or condemned upon the dicta of authority; nothing received or rejected but after patient, thorough and impartial investigation. Follow truth wherever she may lead; despising, on the one hand, that slavish submission to theory and hypothesis, which contents itself without farther attempt at progress; and, on the other, that criminal surrender to a shameless empiricism, which regards its wasteful sacrifice of human life only as a matter collateral, and subsidiary in its senseless search after panaceas and specifics.

But the limitless capabilities of the press, the engine and the telegraph are not *alone* sufficient to achieve the moral, physical, or intellectual regeneration of the world. Notwithstanding the immeasurable energies they operate with, theirs would be the labours of Sysiphus, as unavailing as they might be endless. To render them effective, mind, powerful, energetic and constant, must be brought into active co-operation. Advances from the old resting places must be made; something new and better and more practiced than the heir-looms of antiquity must be accomplished, or the printing press might as well have never superseded the parchment of the scribe, the steamship the primitive craft of the Argonauts, or the magnetic telegraph the mail in the days of Franklin.

To fulfil his duty, then, the *good* physician can be no idler. His is no sinecure position in society. No stewardship of the Chiltern Hundreds allows him to retire from the field of his labours with his laurels untarnished. Exemption from toil, inglorious ease, are terms which find no place in the vocabulary of *his* language. The close of pupilage sets up no terminus to study. It is but the pleasant preparation to a life of toil. To have won the diploma, with its blue ribbon and seal, is but the incipient stage in a long and rugged journey. There is something to do afterwards; something which, while it makes large drafts upon his physical powers, will, at times, task to the verge of utmost tension his every intellectual resource. Some things, too, besides books are to be attended to. The eye, the ear, and the sense of feeling, must be professionally cultivated. Individuality, causality and comparison must not be suffered to rust out in the criminal indulgence of inactivity. Duty to ourselves, our patients, to the profession, and to God, call on us to work while the day lasts.

But this is not all. The facts gathered up by experience, and the results of philosophical induction must not be trusted to the hazard and uncertainty of tradition or manuscript. The leaves of the sybil and the papyri of the copyist often perished before the memory of their authors. Of the five hundred thousand volumes, sacrificed to sectarian zeal, by the Arabian fanatic, who ever heard of a duplicate? It then becomes a duty that everything which will aid, however remotely, in the advancement of science, should be preserved with care. Copies should be multiplied, so that the truths of the original may be more widely diffused, and to guard against the contingency of their extinction by carelessness or accident.

And what if the offering we bring to the common treasury be small? If it affords *any additional* light, the insignificance of its value furnishes no sufficient reason for withholding it. The little spring which trickles from some narrow crevice upon the western slope of the Alleghanies goes to help swell the magnificent Mississippi. So with contributions to medical improvement; singly and alone they add but little to the stock of medical knowledge; but, by collocation and comparison, they furnish ample data from which numerous and invaluable practical results may be deduced. If no *monographs* had been written, the press, we imagine, would have found it no Herculean labour to have supplied the *books* for the physician's library. Medical *book-making*, (and we intend no disparagement by the term,) from the great multitude of materials which has been accumulating for centuries, has come, and necessarily so, to consist, *principally*, in the drudgery of compilation; requiring, we are ready to admit, no trifling amount of patient research and sound discrimination.

Endeavouring to add somewhat, if only a modicum, to the mass of knowledge already laid by in the garners of medical improvement; trusting that some useful truths may be more fully illustrated or more deeply impressed, the following contribution to an important branch of vital statistics is now offered for the consideration of the profession.

The following pages will contain an analysis of 927 cases of midwifery, 546 having occurred in my own practice. To my friends Dr. Southwick, of Blackstone, Dr. Field, of Leominster, Dr. Stone, of Hardwick, Dr. Workman, of Worcester, and Dr. Wheeler, of Paxton, I am indebted for the balance; 201 of which occurred in the practice of Dr. Southwick. They will accept my thanks for their kindness in allowing me to make use of them in the present communication. To Dr. Field, of Leominster, I am particularly obliged for his copious notes upon his cases of puerperal fever, and trust *he* will pardon me, as there can be no doubt *our readers* will, for the liberal drafts I have made upon them.

1. *The whole number of children.*—The 927 cases of delivery gave birth to 932 children; there being five cases of twins.

2. *Illegitimate children.*—Of the 927 mothers, 914 were married and 13 were not; thus furnishing a ratio of 1·4 for every illegitimate to every 100 children born in wedlock. Of the mothers having illegitimate children, two were widows, each with a family of five children. One belonged to the upper the other to the lower ten thousand in society. Of the others one was forty-three, and the remaining ten were all under twenty-three years of age.

3. *Age of the mother when married.*—Of the 927 mothers, their ages when married were ascertained in 568 instances. The following table will exhibit their ages; thus three were married at 14 years of age, and so on.

Age of 568 mothers when married.

Age,	14	15	16	17	18	19	20	21	22	23	24	25
No. of mothers,	3	3	23	61	70	56	73	58	43	41	40	29

Age,	26	27	28	29	30	31	32	33	35	36	38	41
No. of mothers,	23	14	10	4	6	4	2	1	1	1	1	1

The united ages of the 568 mothers amount to the sum of 11,991 years; thus furnishing the sum of 21 years and 11 hundredths as their average age, when married. By a law of this commonwealth males under twenty-one years of age, and females under eighteen cannot *legally* enter the marriage relation, without the consent of their parents or guardians. By an inspection of the foregoing table, we shall find there were 90 mothers who could not have been *legally* married without such consent.

The perpendicular lines, as will be seen, divide the *preceding* table into six equal periods of four years each. The *following* one exhibits the number of women married in each of the six periods; thus, during the first period, comprising the ages of 14, 15, 16 and 17, there were 90 women married, and so on.

Number of women married in each period.

Periods,	1st.	2d.	3d.	4th.	5th.	6th.
No of women,	90	257	153	51	13	4

From the data furnished by the foregoing table, the probabilities of marriage (so far as the limited number of cases, in the present paper, may be allowed to settle a matter of such grave import), may be calculated with a close approximation to the truth. The following table exhibits the per centage of the probabilities of marriage during each of the six periods of the preceding table. Thus, a woman, single at the *beginning* of each of the six periods, will have as many chances for matrimony during that period, as are expressed, by figures on the line immediately below.

Chances of marriage during six periods.

Periods,	1st.	2d.	3d.	4th.	5th.	6th.
Per centage of chances,	16	45	27	9	2·3	·7

4. *Age of the patient when delivered.*—Of the 927 cases, the age of the patient, when delivered, was noted 591 times. The ages of the different women extend over a period from 14 to 46 years. The following table will show the distribution of the whole number of births occurring at different ages, and is to be read thus; one was delivered at 14 years of age, and so on.

Age of 591 mothers when delivered.

Age,	14	15	17	18	19	20	21	22	23	24	25	26	27	28	29	30
No. delivered,	1	1	6	20	25	26	29	40	32	34	25	35	44	26	20	36
Age,	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46
No. delivered,	18	22	20	18	17	24	14	13	11	11	4	7	4	5	1	2

As will be seen, the perpendicular lines divide the *preceding* table into eight equal periods of four years each. The *following* table will exhibit the number of deliveries in each of the periods; thus, during the first period, comprising the ages of 14, 15, 17, and 18, there were 28 deliveries, and so on of the other periods.

Number of deliveries in each period.

Periods,	1st.	2d.	3d.	4th.	5th.	6th.	7th.	8th.
No. of deliveries,	28	120	126	126	78	68	33	12

To medical men the following table will be more curious than useful; while, to him who is conversant with last wills and testaments, and who is deep in the mysteries of "cross" and "contingent remainders," it may afford some useful hints. So far as the paucity of cases may be relied on to establish a rule, the calculation of the chances of pregnancy, exhibited in the following table, bating the fractions (which were not taken into the account) may be relied on as correct. The table is to be read thus:—a woman marrying at the *commencement* of either of the eight periods, will have as many chances, out of an hundred, of becoming pregnant, during that period, as are expressed by the figures on the line immediately below such period.

Chances of pregnancy.

Periods,	1st.	2d.	3d.	4th.	5th.	6th.	7th.	8th.
Chances of pregnancy,	5	20	21	21	14	12	5	2

In Collins' Midwifery, a table is given of the ages of 16,385 women at the period of their delivery. His cases occurred, it will be remembered, in the wards of a Lying-in-Hospital, in a crowded city; they were furnished, principally, from the lower and poorer classes of society, and, consequently, should be expected to present somewhat different results when compared with the experience of private practice, where the patients were drawn from all classes of society, and who were located in a country region proverbial for its healthfulness. The following table is constructed for the facility of comparison, and is to be read thus: of 16,385 cases of delivery at Dublin, 5 per cent. occurred in patients under 20 years of age, and of 591 cases at Mendon, 9 per cent. occurred in patients under the same age, and so on.

Comparison of Dublin with Mendon.

Places of observation.	Under 20 years.	20 to 30 years.	30 to 40 years.	Over 40 years.
Dublin, Ireland,	5	62	30	3
Mendon, Mass.	9	52	33	6

5. *Whole number of pregnancies.*—Of the 927 cases, the whole number of times which each patient had been pregnant was ascertained in 916. They are arranged in the following table, and are to be read as follows, thus: 244 were 1st pregnancies, and so on.

Number of times each patient had been pregnant.

No. of pregnancy,	1st.	2d.	3d.	4th.	5th.	6th.	7th.	8th.	9th.
No. of patients,	244	197	141	111	80	56	28	17	13
No. of pregnancy,	10th.	11th.	12th.	13th.	14th.	16th.	17th.	20th.	
No. of patients,	10	8	4	2	2	1	1	1	

As may be determined by an inspection of the foregoing table, it will be seen that the aggregate pregnancies of the 916 patients were 3033; thus averaging three pregnancies and a fraction to each patient. While speaking of pregnancies in this connection, we shall be cautious about claiming

perfect accuracy; when we bring to mind the very great unwillingness which most women manifest to answer, when inquired of about the subject of abortion. All that can be claimed for this table is an approximation to the truth. For the fuller understanding of this subject, the following table exhibits the ratio of the different pregnancies to 1000 cases; and is to be read thus: in every 1000 cases, 266 will be 1st pregnancies, and so on.

Ratio of the different pregnancies to 1000 *cases.*

No. of pregnancy,	1st.	2d.	3d.	4th.	5th.	6th.	7th.	8th.	9th.
Ratio,	266	215	153	121	87	63	30	18	14
No. of pregnancy,	10th.	11th.	12th.	13th.	14th.	16th.	17th.	20th.	
Ratio,	11	8	4	2	2	1	1	1	

6. *The duration of labour.*—I am aware there is considerable difficulty in fixing the precise time when labour commences. Of any of the changes which may be supposed to occur before those recognised by the mother we know nothing. I have called the duration of a labour that interval of time which elapses between the incursion of pains which continue with short intermissions until the birth of the child; or between the rupture of the membranes and the same event.

Almost invariably, I have found that two or three loose dejections, pretty soon succeeded by pain in the pubic region, or low down in the back, were sure precursors of labour. Never, but in one case, have I known the beginning of labour protracted beyond twenty-four hours after the rupture of the membranes.

Of the 927 cases of labour, its duration was noted in 924 instances, as may be seen by the following table; and which is to be read thus: eight were delivered in one hour after the commencement of labour, and so on.

Duration of labour in 924 *cases.*

Hours in labour,	1	2	3	4	5	6	7	8	9	10	11	12	13	14
No. of women,	8	38	24	33	29	74	29	63	20	39	10	149	20	12
Hours in labour,	15	16	17	18	19	20	21	22	23	24	25	26	27	28
No. of women,	12	13	17	28	5	12	4	9	5	136	4	2	3	7
Hours in labour,	29	30	31	32	33	34	36	37	40	41	42	47	48	49
No. of women,	4	13	1	5	2	3	32	1	11	1	4	2	17	1
Hours in labour,	50	56	60	65	66	67	69	70	72	85	90	96		
No. of women,	2	5	4	2	1	1	1	1	2	1	1	1		

By the preceding table it will be seen that of the 924 cases noted, 516 labours were completed within 12 hours; 273 between 12 and 24 hours; 76 between 24 and 36 hours; 36 between 36 and 48 hours, and 23 were protracted beyond 48 hours. Of the 16,414 cases noted by Dr. Collins, in the Dublin Lying-in Hospital, the duration of labour was ascertained in 15,850 instances. The following table furnishes the per centage of the duration of labour in that Institution, with the results arrived at by the preceding table.

Comparison of Mendon with Dublin.

Places of observation.	Under 12 hrs.	12 to 24 hrs.	24 to 36 hrs.	36 to 48 hrs.	Over 48 hrs.
Dublin, Ireland,	95·1	3·1	0·8	0·5	0·3
Mendon, Mass.	55·8	29·5	8·3	3·9	2·5

Can the very great disparity in the results of the preceding comparison be accounted for by the difference between the hospital practice of the city and the private practice of the country? I am aware that the hard-worked, poorly clothed, and poorly fed patients, collected from the narrow lanes and filthy purlieus of a great city, cannot be expected to exhibit the same pathological conditions, or the same catenation of obstetrical phenomena, as the robust, well fed, and warmly clad inhabitants of the country. Especially must we allow there is reason for difference when the collocation brings the squalid and suffering Irish-woman into juxtaposition with the happy and healthy country-woman of our own commonwealth. But making all reasonable abatement on the score of differences that are plain and obvious, the discrepancy between the results arrived at, at the two places of observation, is still too great not to prompt the desire for a fuller and more satisfactory solution of the problem. The question still remains unanswered why 95 per cent. of cases of midwifery, in the hospital practice of Dublin, should be completed within 12 hours, while only 55 per cent. are completed in the same time in Massachusetts; or why 25 cases out of every 1000 are protracted beyond 48 hours in Mendon, and only three in Dublin.

The following table contains an analysis of all the cases, 23 in number, where the labour was of longer duration than 48 hours.

Number of case.	Age of patient.	No. of pregnancy.	Hours in labour.	Presentation.	Alive, dead, or putrid.	Sex.	Weight.	Observations.
1	23	2	69	Vertex.	A.	M.	8	
2	17	1	50	One foot.	A.	F.	10	O.
3	35	12	70	Both feet.	D. p.	M.	6	O.
4	21	1	60	Vertex.	A.	M.	9	
5	29	4	50	Breech.	A.	F.	8¼	O.
6	23	1	90	Vertex.	D.	M.	10¼	O.
7	36	2	50	Face.	A.	F.	9	O.
8	31	5	56	Vertex.	A.	M.	8	
9	17	1	65	do.	D.	M.	7¼	
10	18	1	56	Face to pubis.	A.	M.	7	O.
11	17	1	60	Vertex.	A.	M.	8	
12	39	3	96	do.	A.	F.	8¼	O.
13	20	2	72	do.	A.	M.	9	
14	17	1	67	do.	D.	M.	7	
15	21	1	85	do.	A.	M.	8	O.
16	38	7	72	Breech.	D.	M.	9	O.
17	27	2	56	Vertex.	A.	F.	8¼	
18	23	3	56	do.	D.	M.	8	
19	16	1	66	do.	A.	F.	7	
20	19	2	56	do.	A.	M.	8	
21	17	1	60	Both feet.	D.p.	F.	7	O.
22	26	4	65	Vertex.	A.	M.	7	
23	21	1	60	do.	A.	F.	8	

Observations.—Case 2 was a first pregnancy, and the child, weighing ten pounds, was born alive, after a labour of fifty hours. The membranes were ruptured early in the labour, and the right foot soon came down. No attempt was made to bring down the other foot, and the protraction of the labour seemed to be principally owing to the difficult passage of the hips through the bony passage. The pains, for the most part, were not severe or striving.

Cases 3 and 21 were presentations of both feet, and both the children were dead and putrid. The pains in both cases were, for a great portion of the time, feeble and irregular. The membranes were ruptured early in the labour, and the peculiar fetor of decomposition was directly noticed; in one case, so pungent as to pervade the whole house.

Cases 5 and 16, the breech presentations, were large children, and the length of the labours, although the pains, for the most part, were strong and regular, seemed to be principally owing to the difficulty of their passage through the superior strait of the pelvis. There was no difficulty in the delivery of the head in either case. In number 16, the child had been dead many hours before the termination of the labour.

Case 6 was delivered by lessening the head and the use of the blunt hook. The mother had a rapid recovery—has since become pregnant and been delivered of a living child, after a short and easy labour, without assistance.

Cases 7 and 10, being the face and the face to the pubis presentations, were undoubtedly protracted by the peculiarity of the presentations.

Case 12 occurred in a patient who passed eighteen years, from the birth of her last child until the present, without once becoming pregnant. The unusually lengthy labour was principally, if not wholly, owing to the contraction of the pelvis. Both her former labours were long and tedious, and attended with much suffering.

Case 15 was a first pregnancy, and its protracted duration was attributed to the shortness of the sacro-pubic diameter. The child was born by the natural efforts, and both it and the mother did well. She has since removed to a distant part of the country, and has given birth to two sons and a daughter, after long and tedious labours.

The following table exhibits the per centage of the different presentations of the protracted labours.

Presentations of 23 cases of protracted labour.

Presentations,	Vertex.	One foot.	Both feet.	Breech.	Face.	Face to pubis.
Per centage,	69·6	4·3	8·7	8·7	4·3	4·3

7. *Flooding.*—Of the 927 cases of delivery, 838 were noted. In these flooding occurred in 27 cases only. Of these 27 cases, five occurred during labour and before the birth of the child; fifteen after the birth of the child and before the delivery of the placenta, and seven after the delivery of the

placenta. The flooding before the birth of the child ceased, or was greatly moderated, upon the rupture of the membranes. That after the birth of the child, and before the expulsion of the placenta, was speedily checked by the delivery of the placenta, or, soon afterwards, by the use of opium and acetate of lead, the liquor cupri sulphatis of the U.S. Pharmacopœia, ergot, &c. The flooding after the expulsion of the placenta was arrested by the same means. In no case was the hemorrhage so excessive as to become alarming. The patients all speedily recovered.

8. *Convulsions.*—Of the 927 cases, convulsions occurred only in *two* instances. An account of one of these cases was published in an article, "Statistics in Midwifery," in the October number of this Journal for 1843. Of the other no notes were furnished by my correspondent, in whose practice it occurred. This is the more to be regretted as such cases are of rare occurrence; and, as much doubt hangs over their pathology, every case should be subjected to a rigid scrutiny.

9. *Puerperal fever.*—Under this head are included puerperal peritonitis, metritis and crural phlebitis. In the 927 cases, puerperal fever made its appearance in 12 patients. *Two* of these cases were reported in the paper before referred to, and the remaining *ten* were furnished by my correspondents. Nine of the ten occurred in the practice of Dr. C. C. Field; and I am indebted to his kindness for the liberty of presenting the following transcript of his notes.

Case I.—Mrs. S——, aged 21, general health good, was confined on Saturday morning, Aug. 25, 1844, with her first child, a girl, after a natural and not difficult labour, which had continued through the preceding night. Sunday evening, Aug. 26, she was seized with chills, headache, pain in the back and limbs, and severe pain with tenderness in the bowels. This state was soon followed by high fever, thirst, quick pulse, &c. She had prescribed for her, and took calomel and antimonial powder that night, to be followed by salts and senna next morning.

Monday, Aug. 27th.—Medicine operated freely and with some relief to the pain in the head, back, limbs and bowels. Skin hot but moist, pulse quick, thirst urgent, bowels still tender. In the evening took 2 grs. of calomel and 1 gr. of ipecacuanha in pill, to be repeated in six hours, and Seidlitz powders next morning.

Tuesday, 28th.—I was this day called to take charge of the patient, as her attending physician was obliged to leave town for a week. When I arrived the pills and Seidlitz powders had operated three or four times. Pain in the head and limbs had ceased; pulse 120 beats in a minute; tongue covered with a brownish-white coat; tenderness and swelling of the abdomen; a "fever turn," with flushed cheeks in the afternoon; lochial discharge very scanty, and no secretion of milk. Skin was moist; thirst urgent; not much restlessness; patient *not* despondent. On account of the tenderness of the bowels she had not been out of bed for two days. I prescribed 2 grs. of calomel and 4 grs. of antimonial powder to be taken in the afternoon, and another dose in the evening of the same quantity; also 2 grs. of calomel and 1 gr. of ipecacuanha, in pill, at midnight, to be followed by

a wineglassful of a solution of Epsom salts with magnesia in the morning, once in three hours, until free catharsis was produced. The solution of Epsom salts is made by dissolving 2 oz. of the salts in a pint of water, adding a tablespoonful of magnesia.

Wednesday, 29*th*.—Patient had slept some in the night; skin moist; pulse 112; thirst less; tenderness of the bowels much abated; lochia scanty and no secretion of milk. She had taken three doses of the solution of salts which had procured six or eight dejections. Prescribed Dover's powder at bed-time and 2 grs. of calomel and 4 grs. of James' powder once in four hours for the next day. Solution of gum arabic, rice or crust water, &c., for drinks.

Thursday, 30*th*.—Patient had passed a quiet night; pulse 100; but little tenderness of the bowels; she could turn upon her side in bed without much suffering; sat up long enough to have her bed made in the morning. Had taken the calomel and antimonial powder through the day, and is to continue same through the night.

Friday, 31*st*.—Pulse 96, and other symptoms improving. As there had been no motion of the bowels since the 29th, she took a dose of the solution of the salts, which produced two or three dejections. Is to take a Dover's powder at bed-time.

Saturday, *Sept*. 1*st*.—Patient says she feels more comfortable; pulse 90; skin moist with some heat; tongue moist with a thick, dark coat; took calomel and James' powder in the forenoon and afternoon, a pill of calomel and ipecacuanha at bed-time, to be followed by castor oil in the morning.

Sunday, 2*d*.—Medicine had operated well; pulse 84; all other symptoms better; patient complains of tenderness of the gums, and there is some mercurial fetor in the breath. Omit all medicine. Arrowroot and gruel for nourishment.

Monday, 3*d*.—Patient sat up half an hour this morning; pulse 72; feels "faint at the stomach;" has some salivation. Prescribed a wineglassful of infusion of chamomile and valerian, three times a day; her bowels to be moved, every second day, by an infusion of senna, figs, and ginger. Arrowroot, &c., for nourishment. The infusion of senna is made by infusing 1 oz. of senna, 4 oz. figs, and a teaspoonful of ginger in a pint of boiling water. Dose, half a tumblerful, to be repeated if necessary.

After four or five days the sore mouth ceased, the tongue became clean; the appetite returned; secretion of the milk took place and a perfect convalescence ensued. Her health has continued good and the child is robust.

I may here remark that in this case, as in all the others, occurring within the first week after confinement, the subjects of the fever, during the latter months of pregnancy, had an unusually good appetite, which had been freely indulged, and they had become quite plump in flesh—I might almost say fat.

Case II.—Miss C—— W——, unmarried, healthy, was confined on the morning of the 18th of September, 1844, after a natural labour with her first child, a girl. She was in labour most of the night, but it was not difficult or tedious. She was quite comfortable during the first week. Her nurse then left her, and she was obliged to leave her bed and room and take care of herself and family, consisting of her father and brother and sister. She kept about for nearly a week, when, after washing and hang-

ing out the clothes, she was attacked with chills, pain in the bowels and headache.

1*st day.* Saw her to day for the first time. She informed me she had felt some pain and tenderness of the bowels ever since she had left her room. Had taken castor oil twice but without relief. I found her pulse quick, tongue coated with a white fur; bowels tender and painful; but slight secretion of milk; lochia had ceased for some days. I left her two pills of calomel and ipecacuanha, each containing two grs. of calomel and one gr. of ipecacuanha, one to be taken then and the other in six hours, to be followed by salts and senna in the morning, in divided doses. Warm fomentations of hops and spirits to the abdomen.

2*d day.* Did not see her this day until evening. Found the stomach had rejected the pills and infusion of senna and salts. Pulse one hundred and thirty; abdomen very much swelled and excessively tender; shoulders raised by pillows, and feet drawn up to relieve the tension of the abdominal muscles; cheeks flushed; skin hot and dry; thirst urgent; frequent vomiting of green matter and constant hiccough. Prescribed powders, each containing two grs. of calomel and one-sixth of a gr. of morphine, to be taken once in four hours, and a blister to be applied over the whole bowels. Her mouth to be frequently moistened with a solution of gum arabic. She had no nurse but was dependent for what care she had taken of her, upon the neighbours. Her father was so poor as to afford nothing but the commonest necessaries of life when the family were well, and, of course, none of the conveniences of sickness.

3*d day.* Blister had filled well throughout its whole extent; vomiting had ceased as also the hiccough; pulse one hundred and thirty; bowels less painful and tender, but could not bear to be moved in bed; skin moist but hot; thirst still urgent, &c. Prescribed two grs. of calomel without the morphine, once in four hours, and gum arabic, in solution, for drink. Saw her again in the evening. Had flushed cheeks and a high "fever fit." Other symptoms same as in the morning. The stomach remaining quiet and no operation from the bowels yet, I prescribed three grs. of calomel, once in six hours, and a wineglassful of the solution of salts with magnesia, once between each powder, and to be continued, if the stomach tolerated the medicine, till free purging was produced.

4*th day.* Patient had slept some. The medicine had been retained and operated freely, some eight or ten times, with marked relief to all the alarming symptoms. Pulse one hundred and eight; fever less; less tenderness of the bowels, though she thought she could not be got up in a chair on account of the remaining soreness. Prescribed calomel and James' powders once in six hours through the day and night, and a wineglassful of the solution of salts with magnesia the next morning, and to be repeated if need be.

5*th day.* Patient had slept some with moisture of the skin; pulse one hundred; fever less; skin hot but moist; thirst less; pain and tenderness in the bowels much relieved, could be turned on her side and lie awhile; medicine had operated kindly, three or four times during the day. Take Dover's powder at bed-time.

6*th day.* Pulse ninety and all other symptoms better. Sat up in a chair long enough to have her bed made and clothes changed. Have a Dover's powder at night.

7*th day.* Patient better, gums a little tender. Omit all medicine and be allowed to take liquid nourishment.

8th day. Pulse seventy two; fever gone. Had a slight salivation for four or five days. During the second week the treatment was similar to that of the first case, and, like that, terminated in perfect recovery. The milk returned as convalescence progressed, and her health has been good up to this day.

Case III.—Mrs. B—— was confined with her third child Oct. 15th 1844. The child was a male. With this, as with her other children, she had an easy labour and was so comfortable, during the first week, that she left her room and went about the house the beginning of the second. Towards the close of the second week, after "lumping up some butter" and eating freely of a boiled dish for dinner and some of the same, *cold*, for supper, she was seized with symptoms of peritonitis. During the night the stomach relieved itself of its load, and she took a dose of castor oil the next morning, which operated well, but without affording any relief. When I first saw her, the latter part of the day following the supper of "cold victuals," she was labouring under symptoms similar to those of case 2d, except that there was no vomiting. She took a pill of two grs. of calomel and one gr. of ipecacuanha to be followed by the solution of salts with magnesia, until free catharsis should follow. As the stomach tolerated the medicine a favourable impression was made on the disease at the outset. The 2d day she took the pills, and the 3d, salts again. The inflammation abated rapidly and was gone on the sixth day from its incursion. The appetite soon returned, the milk was restored and perfect convalescence ensued by the 9th day of the disease. No mercurial effect on the system was noticed.

Case IV.—Mrs. D——, aged 29, healthy, was delivered Dec. 17, 1844, of her first child, a girl, after a natural labour, which continued through the night. The child was born at 7 o'clock A. M. About ten or fifteen minutes afterwards I caused slight traction on the cord to be made (as is my custom), but the placenta did not come away. I found there was considerable hemorrhage. In about fifteen minutes more I tried traction on the cord again, but without success. The feeling imparted to my hand, by the cord, was as if the placenta was held firm. The patient becoming faint the pillows were taken from beneath her head and I used traction again, with pressure over the lower part of the abdomen, but without effect. Faintness continuing, I administered ergot and laudanum. Pain soon came on at regular intervals, and continued for half an hour. During the time I tried traction again, but with no better success. When the specific effect of the ergot ceased, the patient slept awhile with less flowing, but she could not have her head raised without fainting. Gave ergot again; the pains came on and continued about the same length of time as before, but the placenta did not appear. It was now 10 o'clock A. M., and, hemorrhage continuing, I decided to introduce my hand into the cavity of the uterus. I did so, and found an hour-glass contraction of that organ, and the whole mass of the placenta above it. With my fingers I dilated the contraction, as gently as I could, siezed the placenta, which was loose, and removed it. The hemorrhage ceased at once. In the evening I visited her, and found that reaction had come on so as to threaten danger. In order not to mistake reaction after hemorrhage for inflammation, I gave her 8 grs. of Dover's powder, and ordered warm spirits to be kept upon the abdomen.

Dec. 18th. Patient had slept some with moisture of the skin; pulse 120; thirst; furred tongue; bowels very tender, with some pain; skin now hot,

with headache. These symptoms of inflammation existing, I gave her the solution of salts until free purging was produced, to be followed, at bed-time, by a Dover's powder.

19th. Symptoms of inflammation abating, particularly the soreness of the abdomen. Prescribed calomel and the antimonial powders through the day, and Dover's powder at night.

She took the solution of the salts again on the 20th, and also on the 22d, with calomel the intervening day. After the fifth day, the disease rapidly subsided, and was gone on the 8th from its incursion. Convalescence ensued in the course of the second week with the secretion of the milk and perfect restoration to health. The treatment in the second week was like that of the other cases already described. There was a slight mercurial effect in this case. *Quere.* Would the symptoms of inflammation have subsided, in this case, without the active treatment? At any rate she got well under free purging with salts and calomel.

Case V.—Mrs. G——, of Lunenberg, aged 23, was confined with her fifth child, a girl, on the evening of Dec. 18, 1844, after an easy and rapid labour. The child was born and the placenta had come away, with some flowing, before I arrived. She was very comfortable through the first week, as she had been with all her other children; was up and dressed and about her room after the third day, in spite of my repeated caution.

Dec. 25th. Seven days after her accouchement, I was called again in the night. Said she had been "quite smart" until that day; went out into the kitchen and took her meals with the family the day before, and also this morning. Before noon was taken with a severe headache, pain in the bowels, &c. She took, in the afternoon, a dose of castor oil, which had operated, but without bringing any relief. Her pulse was now 120 beats in a minute, strong and full; tongue coated with a white fur; severe pain and great tenderness of the abdomen; headache, and great pain in the back; cheeks flushed; skin hot; but little milk. Ordered fomentations of hops and spirits to the bowels, to be followed, in six hours, by one oz. of Epsom salts with magnesia, and ss. oz. of Epsom salts to be given every four hours until *ten* or *twelve* discharges from the bowels had been procured.

26th. The medicine had purged her thoroughly and with great relief. I need not describe the case further. The inflammation was subdued in six days, by similar treatment to that pursued in the other cases. Convalescence and restoration to health ensued in the course of the second week. The gums were very slightly affected by the calomel.

Of case 6th, (Feb. 26, 1845,) case 7th, (May 6, 1845,) case 8th, (June 10, 1845,) there is no need of a particular description, as they were so similar to the first case, though less severe. The treatment was the same as in that case, except that, as the inflammation yielded earlier, the calomel was omitted sooner, and none of its peculiar effects upon the glands were manifested. The results were the same as in the other cases.

Case IX.—Mrs. F——, aged 25, health good, was delivered of her second child, a boy weighing 10 pounds, on the morning of June 16, 1845, after an easy and rapid labour of three hours' continuance. She was supposed to have gone two weeks, at least, over nine months from conception. During the last four or five weeks of pregnancy, she was obliged to keep her bed, some of the time, each day, on account of great tenseness and ten-

derness of varicose veins, which had extended over the whole surface of the abdomen, the right groin, and down the right leg. There was some swelling of the ankles, particularly at night. She was very comfortable, after her confinement, until the seventh day. The secretion of the milk appeared on the day of her accouchement, and its flow was very abundant for the next six days. During this time her pulse never exceeded 72 beats in a minute. Her bowels had been moved twice, once with castor oil, and once with Seidlitz powders; her nourishment had been water gruel for the first four days, to which, on the 5th and 6th, a little bread was added. The tenseness and tenderness of the varicose veins had almost entirely ceased, and I was congratulating myself on an escape from an attack of phlebitis, which I had for some time feared, when suddenly, on the eve of the seventh day from her confinement,

June 22d, having felt perfectly comfortable up to that moment, and was, in fact, upon the point of sitting up in bed to take a cup of tea, she was seized with severe rigors ("terrible chills," she calls them to this day), so that her teeth chattered and the bed shook under her. I examined her pulse during the rigors and found just 72 beats in a minute, the same as in the forenoon and afternoon of that, and every previous day since her confinement. She is of a calm, quiet temperament, not at all inclined to be nervous, and has had no apprehensions in regard to the result of her accouchement. The rigors lasted about 15 minutes. This state was followed by great heat, headache, pain in the limbs, quick pulse (120 in a minute) and restlessness. She had no pain in the bowels, nor was there any during the disease afterwards; no tenderness, except in a slight degree just above the pubis and in the right groin. No swelling of the abdomen at any time. In the evening she took 2 grs. of calomel and 1 gr. of ipecacuanha in a pill, and another one at midnight.

23d, (8th from confinement.)—Passed a miserable night; pills had operated once; pulse 120, soft; tongue covered with a white coat; thirst urgent; lochia suppressed; milk almost entirely gone; pain in the head and back continues; no tenderness save above the pubis and in the groin, and that but slight. Took a full dose of salts and senna, which operated freely in the forenoon; and, during the afternoon and night, had calomel and the antimonial powders, once every four hours. In the afternoon after she commenced taking the powders, she sweat freely on the upper part of the body, arms, neck and face; but there was no moisture of the skin on the lower part of the body and lower extremities. This state continued during the whole course of the disease.

24th, 9th day.—Took a Seidlitz powder this morning, which, with the calomel taken in the afternoon and night previous, operated six or seven times during the day; pulse 120; not much restlessness; headache gone; secretion of the kidneys scanty and high-coloured; no milk; lochia entirely suppressed; some sleep by short naps in the night; skin moist as mentioned in last record. She took no anodyne, as there was not much restlessness and had some sleep. Prescribed 2 grs. of calomel and 4 grs. of James' powder once in six hours only, as there was a tendency to run off by the bowels.

25th, 10th day.—Symptoms much as yesterday. Continue calomel and James' powder through day and night.

26th, 11th day.—In the morning took one wineglassful of the solution of salts with magnesia, which operated four or five times through the day. From this time the pulse began to moderate in frequency.

27*th*, 12*th day*.—Pulse 108 and at night 100; rather less heat of the skin, and other symptoms the same. Took the antimonial powder without the calomel.

28*th*, 13*th day*.—Pulse 96; heat of the skin abating; thirst less; urine yet scanty; other symptoms the same. Took a wineglassful of the solution of salts with magnesia again, which operated three or four times during the day. In the night she sweat profusely on the upper part of the body, and a little, for the first time, on the lower part. Towards morning the pulse *suddenly* fell to 72, with some disturbance of the nervous system. The lochia also *suddenly* returned, and after two or three hours of quiet sleep she awoke late in the morning.

29*th*, 14*th day*.—Free from fever. At once the tendency of the groin increased and the right limb rapidly began to swell. The limb swelled a good deal, but was not very tender except on motion. There was no fever after this time.

30*th*, 15*th day*.—Patient began to take an infusion of chamomile and arrowroot for nourishment. The bowels were kept soluble by the infusion of senna, figs and ginger, every second day. The limb was bathed with volatile liniment and spirits. The secretion of milk began to return, and, during the second week became abundant. At the end of the second week, from the incursion of the disease, she could sit up most of the day. Began soon after to walk about with crutches and continued their use for two weeks, having the limb bandaged. As she began to get about, the swelling of the limb diminished, although it did not entirely subside until the end of four or five months. She did not suffer from mercurial sore mouth. Her health was perfectly restored and remains good to this time.

In concluding the foregoing relation, Dr. Field says: "You will perceive that I rely very much on early and thorough purging with calomel and salts. That it will have a decided good effect to control and subdue inflammation, I think there can be no question. The medicine operates without pain, and, under its use, the pain and tenderness of the bowels rapidly subside. If the inflammation does not decidedly yield within two or three days, I keep up the administration of the calomel in order that I may have its peculiar effect to resolve any remaining disease. If I was to volunteer a theory of the beneficial action of such treatment, I would say that, by the abundant serous discharges, it procures depletion from the organs affected, or from their near vicinity; prevents the effusion of coagulable lymph and thereby promotes resolution. If the inflammation continues beyond the fourth day, I think it safer for the patient that calomel should be pushed to the extent of affecting the gums, for then I feel assured that the dregs of the disease will be removed, and there will be less danger of a relapse. Neither have I found free purging, in this way, produce prostration of strength even in feeble persons. Of course this should be done in the outset of the disease. How it might do, if the disease had been allowed to run on for three or four days, unchecked, I cannot say. It might bring on a troublesome diarrhœa and prostration. As yet I have had no case in which the inflammation did not subside, if I could procure free catharsis, with salts, soon after the attack."

Note.—Some time since I prepared the following "Abstract of Cases of Midwifery," and distributed copies among many of the physicians of my acquaintance, with the hope that I should be able to collect an account of all the cases occurring in their practice. As yet I have received but few returns. Nevertheless, I do not yet despair of enlisting their hearty co-operation, and of being able, at some future day, to present a full account of all the cases of midwifery, yearly occurring, in the County of Worcester.

Abstract of cases of Midwifery kept by . . . *of*

NUMBER OF CASES.		
	Mother.	Age when married.
		Age when delivered.
		Number of pregnancies.
		Number of hours in labour.
		Flooding after 6 months, and before labour.
		Flooding during labour, and before delivery.
		Flooding between the birth of child and delivery of placenta.
		Flooding after delivery of the placenta.
		Convulsions.
		Puerperal fever.
	Child.	Presentation.
		Sex.
		Weight.
		Length.
		Insertion of the funis.
		Diseased.
		Deformed.
		Illegitimate.
		Dead or alive, or dead and putrid.
		Died during the 1st month.
		Delivered at what month of pregnancy.
		Year, month, and day of birth.
		Hour of birth.
		Interval between twins.
		Force delivered.
	Placenta.	Minutes between birth of child and delivery of the placenta.
		Placenta upon edge or mouth of uterus.
		No. of placenta in twin cases.
		Force delivered.
	Previous children.	Whole No. previous children.
		Whole No. males.
		Whole No. females.
		Whole No. males now living.
		Whole No. females now living.
		No. twins or triplets.
		Fully reported.

10. *Presentations.*—Of the 932 children, subject of the present analysis, the presentation was determined in 912 instances. In the remaining number the child was either born before the arrival of the accoucheur, or, if the presentation was determined, was not made a matter of notation in the "abstract." The different presentations are collected in the following table, and which is to be read thus: 874 were presentations of the vertex, and so on.

Presentations of 912 *cases.*

Presentation.	Vertex.	Breech.	Feet.	Foot and knee.	Knees.	Face.	Face to pubis.	Placenta.	Funis.	Unknown.
Number of each,	874	13	9	1	1	2	8	1	3	20

In order to make the comparison with greater facility, the following table has been constructed, showing the ratio of the different presentations in 100 cases. The table is to be read thus: 95·8 per cent. were presentations of the vertex, and so on.

Ratio of presentations in 100 *cases.*

Presentation.	Vertex.	Breech.	Feet.	Foot and knee.	Knees.	Face.	Face to pubis.	Placenta.	Funis.
Ratio,	95·8	1·4	·9	·1	·1	·2	·8	·1	·3

The following table is constructed to exhibit the ratios of the presentations in 1000 cases; the *first* line, the presentations in cases which were completed *within* 48 hours; the *second*, the presentations in cases protracted *beyond* 48 hours. The table is to be read thus: in every 1000 cases completed within 48 hours, the vertex presented 964 times, and so on; in every 1000 cases protracted beyond 48 hours, the vertex presented 696 times, and so on.

Ratio of presentations in 1000 *cases, under and over* 48 *hours.*

Presentation.	Vertex.	Breech.	One foot.	Both feet.	Foot and knee.	Knees.	Face.	Face to pubis.	Placenta.	Funis.
Under 48 hours,	964	12		7	1	1	1	7	1	3
Over 48 hours,	696	87	43	87			43	43		

From this table we see that there is a much larger proportion of presentations, other than the vertex, in those cases which are protracted *beyond*, than in those which are completed *within* forty-eight hours from the commencement of labour. Will not this fact aid in the solution of the problem whether the protracted labour is not, in some measure, to be accounted for

by the unusual presentation of the child? That the ratio of the presentations of the breech, one foot, both feet, face, and face to the pubis, in those labours protracted beyond forty-eight hours, should be so greatly increased beyond that which obtains in cases which are completed within that period, cannot, I think, be regarded as accidental or fortuitous.

Of the *breech* presentations, three were included in the statistical article before referred to, leaving eleven for the cases occurring since its publication. The following table exhibits a condensed analysis of them.

Analysis of 11 *breech presentations.*

No. of case.	Age when married.	Present age.	Number of pregnancy.	Length of labour.	Sex.	Weight.	Alive or dead.	Full time or not.
1	20	27	4	10 hrs.	F.	4¾ lbs.	A.	9 mos.
2	26	29	1	12	M.	6	A.	9
3	18	40	11	6	F.	9½	A.	9
4	23	35	4	12	F.	8	A.	9
5	21	26	3	17	F.	7	D.	9
6	17	30	5	15	M.	8¼	A.	9
7	23	29	2	50	F.	7	A.	9
8	20	21	1	24	F.	6¼	D.	9
9	30	33	1	12	M.	7¾	A.	9
10	21	24	1	6	F.	4	D.	7
11	19	26	3	30	F.	8	A.	9

Of the foregoing cases, No. 1 was a case of twins. The first child was born with the vertex presenting, weighed five pounds and a half, and died during the first month. The interval between the birth of the two children was fifteen minutes. Nos. 5, 8, and 10, where the children were still-born, were attended by no unusual circumstance, except that No. 10 was a miscarriage. The children had been some time dead, as evidenced by the fact that, in many places, the cuticle could be easily detached.

The *knees* presentation occurred in the first pregnancy of a woman, aged 22, after a labour of eighteen hours. It was an abortion in the sixth month of pregnancy, the child, a boy, weighing two pounds and three-quarters, and still-born.

Of the nine presentations with *both feet*, three were disposed of in the article before-mentioned, leaving six to be analyzed in the present communication, as may be seen by the following table.

Amalysis of 6 *cases of presentation with both feet.*

No of cases.	Age when married.	Present age.	Number of pregnancy.	Hours in labour.	Sex.	Weight.	Alive, dead, or dead putrid.	Full time or not.
1	14	35	12	70	M.	6	D. p.	9
2	19	24	2	7	M.	7	A.	9
3	21	22	1	17	F.	3	D.	9
4	36	37	1	5	M.	1	D.	5
5	22	27	2	36	F.	7	A.	9
6	28	33	3	10	M.	7	A.	9

In the foregoing table, No. 3 was set down in the "abstract" as "diseased" and "deformed," being acephalous. It occurred in the practice of one of my correspondents, and I am unable to give any further account of the fœtus. No. 5, as will be seen, was born at the fifth month, and weighed but one pound. By a reference to the "abstract," I find there was flooding in the early stage of pregnancy; and, probably, the small weight of the fœtus, as well as the premature labour, is attributable to this fact.

The *foot and knee* presentation was included in the article heretofore mentioned.

The two *face* presentations occurred, the one before my former report, and the other was furnished by a correspondent without note or comment.

The eight *face to the pubis* presentations are returned without remark, except in three cases. One, a female, born after a lingering labour of forty hours, weighing nine pounds and a quarter; another was the last born of a pair of twins, a male, weighing seven pounds and three quarters; and the third was a female, weighing eight pounds. The last two were ninth pregnancies. Mothers and children all did well.

The *placental* presentation occurred in a case of abortion, and has been already reported.

Of the three cases of presentation of the *funis*, two have been disposed of in a former article; of the other, I find no remark except that the vertex next came down, and that the child was dead at birth.

The presentation with *one foot* was suffered to go on without endeavouring to bring down the other foot. The labour progressed rapidly and terminated favourably both for the mother and child. Need much importance be attached to the advice, to search for and bring down the other foot?

11. *Sex.*—Of the 932 children born, their sex was noted in 918 instances; and the proportion to each other was as follows, viz:—

Sex of 918 *children.*

Males, 477.	Females, 441.
Males, 52 per cent.	Females, 48 per cent.

12. *Weight of children.*—Of the 932 children, their weight was ascertained in 836 instances. The following table is to be read thus: one child weighed one pound, and was a male; four weighed two pounds each, two of whom were males and two were females, and so on.

Weight and sex of 836 *children.*

Weight in lbs.,	1	2	3	4	5	6	7	8	9	10	11	12
No. of children,	1	4	4	3	3	29	141	260	244	108	38	1
No. of males,	1	2	3	1	2	10	55	112	132	70	30	1
No. of females,		2	1	2	1	19	86	148	112	38	8	

The whole number of children, 836, whose weight was ascertained, weighed 6960 pounds, averaging eight pounds five ounces and a fraction, each. The whole number of males, 429, whose weight was ascertained,

weighed 3695 pounds, averaging eight pounds and ten ounces, each; while the whole number of females, whose weight was ascertained, being 407 in number, weighed 3265 pounds, averaging eight pounds, each.

13. *Length of the children.*—Of the 932 children, 242 were measured at birth, and their average length was found to be nineteen inches and a quarter, with but a fractional difference between the males and the females, the males being the longest.

14. *Insertion of the funis.*—Of the 932 children, the insertion of the funis was noted in 242 instances. The funis was inserted in the centre of the body of the child 209 times out of the 242, who were examined for that purpose. The insertion of the funis in the centre of the body is accounted *one* of the evidences of the delivery of the child at the full time; and, consequently, may be used in the settlement of any medico-legal question admitting its applicability. Alone, it cannot be a test of much value; but may be used as corroborative of other and stronger evidence.

15. *Diseased.*—Of the 932 children six were born diseased, viz.: two had spina bifida, one was acephalous, and three were marked "diseased," but no particulars noted.

The acephalous case occurred in the practice of Dr. Southwick, already mentioned as my friend and correspondent, and is returned without remark; as are also the three others marked "diseased." One case of spina bifida was related in the article heretofore published in this journal. The other, happening in my own practice, is as follows, viz.:—

Mrs. A——— was delivered of her first child June 21st, 1839, after a labour of thirty hours. On examining the child, which was a male, a tumour was discovered over the second dorsal vertebræ, about the size of a quarter of a dollar. The tumour was flat, and raised about one quarter of an inch above the surrounding skin. The covering of the tumour seemed to consist entirely of cuticle, and the tumour itself was filled with a transparent fluid, seen to be so through the extremely attenuated covering. Around the base of the tumour was a vigorous growth of hair.

From this time until its decease, Feb. 24, 1840, the child continued to grow, and was as little troublesome as children in general. For the first few days after its birth, a thin transparent fluid was discharged from the tumour, apparently by the process of transudation. The growth of the tumour increased with the growth of the child, and, at its death, was as large as a small orange—that is, about two inches in diameter, and of an oval shape. The lower limbs, it was thought, did not grow in proportion to the rest of the body. They were, at times, partially paralytic, the right limb more so than the left one.

For some weeks before its death, it had occasional paroxysms of laborious respiration, making quite a loud and distressing noise during inspiration. It did not seem to be in pain, at these periods, but after a while, would become quite exhausted by the exertion. I attributed these paroxysms to a loss of power in some of the muscles of respiration, owing to a diminished supply of nervous influence. There was something unnatural about the eyes; the outer angle was considerably raised above the inner one, and the eyeballs exhibited an uncommon degree of mobility. The countenance, in

its tout ensemble, strongly reminded one of those Chinese portraits we often see on fans and other articles of oriental manufacture. It was a common remark of visitors that the countenance betrayed the evidence of idiocy. Of this, however, I did not feel so certain.

The tumour again began to discharge some seven or eight days before death; portions of it became affected with superficial ulceration, and were soon covered with a crop of fungous granulations. The discharge, as at first, seemed to be only the simple exudation of a thin transparent fluid, no opening could be discovered upon the closest inspection. The discharge was small in quantity, so that a change of the compress, once or twice a day was amply sufficient for its absorption. After a day or two of more than common uneasiness, though without any thing particularly noticeable by the parents, on the morning of the 24th of February, the patient was attacked with a severe paroxysm of the laborious respiration. This was repeated with short intermissions frequently through the day; the patient becoming more and more exhausted, the paralytic affection of the lower limbs more profound, and followed before death by a palsy of the left arm. The little patient became comatose at sunset, and died at 10 o'clock of the same evening.

Autopsy, forty hours after death.—Whole surface œdematous, readily pitting upon pressure; tumour flaccid, containing but little fluid; surrounded by an unnatural growth of hair; on dissecting out the tumour, found it to be cellular, two large cells on each side of the median line and several smaller ones, each communicating with the other. The spinous process, as well as the whole posterior portion of the body of the second dorsal vertebræ, was wanting. There was a notch also in the adjoining superior and inferior vertebra, making the opening into the spinal canal one inch and a quarter long by three-quarters of an inch wide at its widest part. A small quantity of serous fluid escaped upon cutting into the sac during the dissection. Pressure upon the head would drive out the fluid at the opening in the spine.

The head was next examined. Upon removing the scalp, the bones of the cranium were found in many places to be deficient in ossification, though covered by the pericranium; some of the spots where no ossification had taken place, were as large as a half dime. Upon inquiry, it was learned that the parents, during the life of the child, had noticed pulsations at these points synchronous with the beating at the fontanelles. The fontanelles were found unusually large. Upon attempting to remove the cranium it was found to be strongly adherent to the dura mater, much more so than in any case I had before witnessed. After considerable dissection with the handle as well as the edge of the knife, the skull was removed, though not without evacuating one of the ventricles by an unlucky slip of the knife. The vessels, either of the dura or pia mater, were not unusually turgid, neither was any spot discovered where the capillary vessels were injected. The brain was now carefully sliced away until the lateral ventricles were exposed. These were found partially evacuated of their contents, one being opened by the removal of the cranium. They were estimated to have contained, when full, six ounces of fluid. The opening between them was three-quarters of an inch in diameter, its shape being a little oval. All the ventricles of the brain were found to be much enlarged and filled with an opaline-coloured serous fluid. Immediately over the central point of the cerebellum, and in contact with it, was an encysted tumour three-quarters of an inch in diameter, filled with a perfectly transparent

fluid. This tumour seemed to have no connection except with the cerebrum, from which it was readily detached by the handle of the knife, and removed without rupture of the cyst. The cerebellum was very much raised at its central point, displaying quite a cone-like appearance. Upon removing the cerebellum a probe could be readily passed from the cranium to the opening in the spine, at the seat of the external tumour.

During the whole dissection very little traces either of recent or of former inflammation were discovered.

16. *Deformed.*—Of the 932 children, the subject of the present communication, six were noted as deformed. Two of these cases were contained in my former article, and two were returned by my correspondents without remark. Of the remaining two, one was a case of talipes varus of both feet. The child lived but a few weeks. Of the other, the following account is extracted from a paper published in the Boston Medical and Surgical Journal, for July 10, 1839:

Mrs. ———, after a day or two of more than usual hard work, was attacked with severe abdominal pains, soon followed by a slight uterine hemorrhage. These symptoms continued through the succeeding night without abatement, the pains being so constant as to allow but little, if any sleep. At half past 9 A.M., on the following morning, I was called to visit her. On my arrival I found her walking about the chamber, and apparently in strong labour pains. She supposed herself between six and seven months advanced in pregnancy. She has never suffered abortion, usually enjoys good health, and is the mother of two fine children. I advised her to go immediately to bed, hoping, peradventure, the premature delivery might be avoided. Complying with my advice, examination was then made, and the head, with the vertex presenting, was found resting upon the external organs. The hemorrhage was slight and the membranes were not ruptured. All hope of escaping the threatened miscarriage was now abandoned, and the customary preparations were directed to be made for the approaching delivery. The pains continued to grow stronger and more frequently recurrent, until 10 o'clock A.M., when the membranes were ruptured, and an *extraordinary* flow of water followed. A few more uterine efforts accomplished the delivery.

The child was still-born, exhibiting no signs of life, except a few, feeble, convulsive motions of the extremities, which soon ceased. On examination of the child it was found to be deformed as follows: The hand, if such it could be called, consisted only of a thumb and forefinger; the other fingers with their corresponding me-

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tacarpel and carpel bones being absent. The thumb and finger well formed, and the nails perfectly developed. On examination of the forearm, the ulna was also found to be wanting; so that the forearm and hand, in their osseous organization, consisted only of the radius, the ossa scaphoides, trapezium, and trapezoides, the metacarpal bones of the thumb and index, together with their respective phalanges. The forearms were bent upwards towards the humerus and could not be straightened; being apparently held in that position, by a rigid contraction of the skin and muscles, at the flexure of the elbow joint.

The organs of generation presented the following mal-formation. A little fullness of the skin upon and below the pubis constituted what may be termed the rudiment of a scrotum. The usual site of the penis was occupied by a membranous tubercle, about the size and shape of a large pea, attached by a base of about two thirds of its own diameter. At first, no orifice was discovered in the tubercle; but, on turning it up, upon its inferior surface and partly in its base, a small orifice was found which proved to be the opening of the urethra; as a probe, properly bent, passed readily through it into the bladder.

Referring the reader to an inspection of the accompanying sketch of the fœtus made at the time, further description will not be necessary.

The mother, on being informed that the child was deformed, immediately answered, "I expected it would it be; it has a *hare-lip*, I suppose." On being asked why she supposed it would be thus deformed, she said, an acquaintance of the family who had a hare-lip, had been at the house several times during her pregnancy, and that she invariably felt *very disagreeable* when he was present. Mothers frequently trouble themselves about some anticipated deformity in their children, but I never knew their predictions verified, except in a single instance; a short account of which was contained in the statistical article before referred to, and published in this journal.

17. *Dead or alive, or dead and putrid.*—Of the 932 children born, 824 were alive, 20 were dead, 6 dead and putrid, and in 82, the fact was not noted. Of the 26 still-born, 22 were born in wedlock and 4 were illegitimate. Of this number, 17 were abortions and 9 were miscarriages.

18. *Died during the 1st month.*—Of the 824 children noted as being alive at birth (if the returns are correct) eight only died during the *first* month, which gives a proportion of 1 in 103. In the Dublin Lying-in Hospital, from November 1826 to November 1833, 16,654 children were born; and, during the time the mothers remained in the hospital (which, in most instances, was from eight to ten days after delivery) 284 died, which gives a proportion of 1 in 58. The difference in the mortality, which will be seen is very great, may be accounted for by the difference between hospital and private practice, and the social and physical condition of the two classes of patients. If, after removal from the hospital and before the close of the 1st month, all the deaths (for, undoubtedly, many occurred in that period) could have been ascertained, the difference would have been greatly increased.

19. *Delivery at what month of pregnancy.*—Of the 932 children born, the period of pregnancy was set down in 844 instances, as may be seen in

the following table, and which is to be read as follows, thus: one was born in the 2d month, and so on.

Month of pregnancy of 844 *deliveries.*

Month,	2	3	4	5	7	8	9	9½	10
No. of deliveries,	1	9	4	3	9	13	794	9	2

Adopting the rule that births *before the sixth month* should be termed *abortions*, and those occurring *after that period and before the full time*, miscarriages, the table gives seventeen as the number of abortions, and twenty-two as the number of miscarriages. *Quere.* Should not the eleven births procrastinated *beyond* the full time be called miscarriages as well as the twenty-two which occurred within the two months *previous* to the full time? These cases were all returned by my correspondents without note or comment, so that I have no knowledge of the evidence upon which the opinion was based that they were thus procrastinated. Of the abortions returned by them neither have I any account. Of those occurring in my own practice two only will be commented on, as, in the others, nothing worthy of remark was noticed.

The following account of them is the substance of two communications read before the Union Medical Association.*

Case I.—At 4 P. M. I was called to see Mrs. P. W., aged 23, married, and the mother of two children. From the patient and her mother I received the following history of the case: Day before yesterday, to wit, on Friday, the patient, while sitting by the fire, was suddenly seized with profuse flooding, and abortion soon followed. She was, as she averred, near the end of the third month of gestation. She went upon the bed at this time and has not been up since. She had but little rest the succeeding night, and yesterday was more unwell; a severe headache, very intense through the temples, coming on early in the morning, succeeded by a flushed face and hot and dry skin. The tongue was furred, she had no appetite and was very thirsty. This day, before my arrival, she had taken a cathartic of magnes. sulph., which had operated well, procuring five or six dejections.

Sunday, Feb. 3d, 1839.—She is now suffering severely from headache, especially in the temples; tongue furred, white at the edges, brown and dry in the middle; skin dry and hot; abdomen moderately full and a little tender over the pubic region; urine scanty and high-coloured; posture dorsal; countenance contracted and anxious; manner despondent and pulse 120 beats in a minute, full and hard. ℞. Venesection ℥fl. xii. Ant. tart. sol. once in three hours. Salts and senna, to-morrow morning to free catharsis. Cool drinks ad libitum. Keep room cool.

Monday 4th, 12 *A. M.*—Cathartic has operated well, inducing five full dejections; headache somewhat less severe; tongue less coated; urine

* A voluntary association in this neighbourhood, organized, May 12, 1834. It is composed of eight or ten members. Its sessions are holden monthly, at which some one reads a dissertation and the others contribute cases or papers on medical subjects. The remaining time of the session is occupied by *friendly* but *unrestricted* criticism.

somewhat increased in quantity, but still high-coloured; other symptoms remain the same. ℞. Ant. tart. sol. at six and twelve o'clock through the day. Ipecac. infus. at nine and three o'clock. Spts. nit. dul. pro re nata. Sinapisms to feet. Cold water to head. Drinks and room the same.

Wednesday 6th, 10 *A. M.*—Found my patient this day much relieved from the pain in the head, but quite deaf; bowels freely open, probably from the antimony and ipecacuanha; less tenderness over the uterine region and at the epigastrium; urine more scanty again and higher-coloured; pulse 110, full but not hard; skin dry, shrivelled and hot; lochial discharge stopped; some delirium last night; pupils contracted and vacant; tongue white and moist; thirst less; abdomen not full and less tender; decubitus dorsal and sliding; countenance anxious and desponding. ℞. Salts and senna, to be taken immediately. Calomel and James' powders at six and twelve o'clock. Ipecac. infus. at nine and three o'clock. Spts. nit. dul. pro re nata. Pil. opii comp. after four free dejections. Room cool and perfect rest.

Friday 8th, 4 *P. M.*—Found the patient, at this record, apparently much better. Salts and senna had operated well, and after four dejections, by the aid of the pill, she had rested well on Wednesday night; abdomen was but little tender. Thursday night was again delirious, talking in her sleep; in the afternoon had two or three full dejections, but, taking a pill, as before, the bowels have since been quiet. After this had some appetite, and eat some few mouthfuls of wheat bread toast. The pulse is now 100 beats in a minute, full and soft; some perspiration about neck and shoulders; urine scanty and high coloured; tongue coated, white at edges and brown in the middle; some thirst, especially for cold drinks. ℞. Cal. and James' powders at six and twelve o'clock. Ipecac. infus. at nine and three o'clock. Spts. nit. dul. pro re nata. Sinapism to pubic region. Room and drinks cool.

Sunday 10th, 4 *P. M.*—Passed the night after the last record very badly; was delirious; very restless; had more fever; more thirst; three dejections; skin hot and husky; tongue more furred. On Saturday morning had epistaxis; grew worse through the day; at night was restless and delirious; very thirsty; no sleep. Has grown worse to-day, since morning; has become quite helpless; is somewhat comatose and has a muttering delirium; at times restless; skin hot, dry and harsh to the feel; is very thirsty; respiration much accelerated; pulse 120, full and hard; abdomen more tumid; tenderness increased over the uterine and epigastric regions; pain darting down the lower extremities quite to the heels and very acute; back burning and painful; tongue brown and cracked; has had no fulness of the breasts nor any lochial discharge since the 6th.

℞. Venesection ℥fl. xii. Calomel and jalap, followed by salts and senna. Epispastic six by six to the uterine region. James' powders and calomel, one in six hours. Continued rest as before.

Monday, 11th, 10 *A. M.*—Cathartic did not operate until after one enema, nor then until one o'clock A. M., this morning; had five dejections and then took a pill of opium, soap and camphor; respiration hurried and occasionally sighing; abdomen not full, but tender upon moderate pressure, just above the pubis; has great thirst; skin hot and dry; tongue brown and cracked in the middle, edges dark red; no secretion from salivary glands or the kidneys; delirium continually present; pulse 130 and small; some cough but dry; eyes closed; pupils contracted; lips brown

and dry; blister beginning to fill. R. Calomel 1 gr. at six and twelve o'clock. James' powder 3 grs. at nine and three o'clock. Spts. nit. dul. pro re nata. Room and drinks cool.

5 *P. M.*—Patient evidently sinking, no improvement in any of the symptoms; blister filled well and has been twice dressed with cabbage leaves; some vaginal discharge since morning, dark coloured, grumous and fetid; abdomen more full and tense; coma more profound and constant; pulse 140, very small and occasionally intermittent.

I now learned, for the first time, that on Friday preceding my first visit, the patient had pushed a common *knitting needle* forcibly up the vagina, with the intention of procuring the abortion. Great pain immediately followed, succeeded, in twenty-five or thirty minutes, by the hemorrhage, and, in five or six hours, by the abortion. She confessed having attempted the same operation one week before, but did not succeed. This was related by the mother-in-law of the patient, who lived in the same house with her; and, as the patient was now unable to hold conversation, nothing further could be elicited. R. Epispastic six by three to nape of the neck. Continue as at last visit.

Tuesday 12th, 10 *A. M.*—Met my friend, Dr. Wilder, in consultation. No dejection since yesterday at sunrise; some perspiration this morning about the face and neck; respiration hurried, the inspiration being spasmodic; is profoundly comatose; has urinated once since last record, urine very high-coloured; face pallid; tongue brown, cracked, dry and occasionally bleeding; bowels rather full but not tympanitic; borborygmi; bloody serum oozing from the angles of the eyes; mucus about fauces and throat gives much trouble, cannot expectorate it; blister on neck but little filled; pulse 130, small and frequently intermittent. R. Continue as yesterday with the addition of small doses of sulphate of magnesia.

5 *P. M.*—Patient moribund and died at 10 o'clock P. M. in the same evening. A post-mortem examination, though urgently requested, was obstinately refused.

Case II.—On Tuesday, March 29, 1842, I was called, at 9 o'clock P. M., to visit a patient, a widow, said to have been attacked with a sudden and alarming uterine hemorrhage, which, on my arrival, I found to be the case. On inquiry, I learned there had been a moderate hemorrhage since Sunday morning last, until a short time before I was called, when, on going to the vessel to urinate, something like half a pint of blood passed off at once, and the patient took her bed in great alarm. Examining the cloths I found the hemorrhage still going on, attended by severe intermittent pains, like those of a woman in labour.

Prescribing a strong dose of laudanum, I then asked for an explanation of the symptoms. After a short pause the patient confessed that she believed herself pregnant, and that she had arrived at the third month of utero-gestation. Finding herself in this unfortunate predicament, she had, from the first disappearance of the menses, been continually taking or doing something to provoke abortion. To use her own expression, she had used a "basket full" of double tansy, and wound off by deep and frequent potations of savin tea. She had worked hard, used the warm bath frequently, exposed herself to "all weathers," taken repeated doses of drastic cathartics, and gone through a regular course of gymnastics, by jumping daily from the dinner table for weeks, but all to no purpose; her burden and her shame were not to be got rid of so easily.

Although, five weeks ago, these measures had induced a scanty hemorrhage, still she was not relieved. Driven now almost to despair, she made application to a physician in the neighbourhood for further aid. In justice to the profession, I should say that this physician had been expelled from the Massachusetts Medical Society, for a wilful disregard of its by-laws. The first prescription of the Dr., which was procured by the *cher amie* of the patient, consisted of a box of pills, of which three were to be taken at bed time and three in the morning. The only effect of this prescription was a powerful and long continued catharsis, which, not producing the desired effect, moved her to make a personal visit to the Dr. about four weeks ago.

At this time an instrument (from the description of the patient, a female catheter) was passed up the vagina, though without giving her any pain. The attempt to rupture the membranes (as I suppose was intended) did not succeed; a phial of drops, which tasted strongly of creosote, were then given to the patient, to be taken night and morning, and she was promised that, in a few days, she would get rid of all her difficulties. The few days were passed in great anxiety, but neither the instrument nor the drops produced any effect. A second visit was now paid to the Dr., eleven days previous to the present attack, and she again submitted herself to his manipulations. The use of the instrument, this time, gave her great pain, and was succeeded by the discharge of a colourless fluid, which continued to drizzle away, in small quantities, up to the irruption of the hemorrhage. From this time the external organs of generation have been tumid and painful, and, at this present time, are so much so, that a partial examination, per vaginam, gives the patient great pain. The vagina is much contracted so as not, readily, to admit the passage of a single finger. At the last visit the Dr. also gave her a second phial of drops, to be taken, in teaspoonful doses, morning and night. These drops put the patient in great pain, especially about the back and loins. The pains were intermittent and seemed like labour pains; and, as the patient had been the mother of five children, I think she may be considered as a competent judge. After taking them for a few days, she says, they made her *blind*, and, becoming alarmed, their further use was discontinued.

Having given such portions of the patient's confession as are materially relevant to a proper understanding of the case, I now proceed with its continued relation.

The dose of laudanum procured but little, if any, relief from the pains. The hemorrhage, not so profuse, however, as at first, still continued. Being called at this juncture to attend another case, I directed the attendant to repeat the dose of laudanum, with three grains of acetate of lead, should the hemorrhage continue profuse. On my return at 2 o'clock A. M., three hours afterwards, I found the patient very weak and faint but, for the last hour the hemorrhage had not been severe. As yet nothing had passed off, so far as I could discover, which looked like fœtus or secundines.

From this time the hemorrhage was moderate and the patient soon rallied. The pains had abated somewhat of their severity, though they were still strong. There was a constant oozing of blood from the vulva. Through Wednesday and the following night the symptoms continued much the same, and the patient, having had a change of body linen and been removed to a fresh bed, was made quite comfortable.

Thursday, March 31st, was ushered in by a slight increase of the pain and hemorrhage. The patient, without waiting for advice, had this morn-

ing, taken a strong dose of salts and senna, and which was now (11 o'clock A. M.) operating powerfully, and putting her in great pain. I immediately gave her 40 drops of laudanum and directed her to take some warm gruel. The dejections were soon checked and she became comfortable. At 3 P. M., I was again called in great haste, and on my arrival, was told that after three or four strong pains, something had come away different from anything which had yet been seen. On examination, I found in the vessel an organized substance, which, viewed in situ, preserved the form, generally, of the uterus. Its whole outer surface, except a small portion, was completely shaggy, the papillæ or flocculi being from half a line to a line in length. At the superior portion, corresponding to what I supposed to have been the surface of attachment to the uterus, it looked like the corresponding surface of a placenta, except that the colour was almost black. The smell of putrefaction was readily discernible, and some spots were plainly undergoing the process of decomposition. On further examination the mass was found to be a sac, about three inches long and one and a half inches in diameter, at its widest part; preserving, generally, the shape of a pear. The walls varied in thickness from one-eighth to one-sixteenth of an inch, except in those portions where decomposition had begun to take place, where they were much thinner. At its inferior end there was a slit or opening extending up about one-third of the way towards the top of the sac. On turning the sac inside out, the inner surface was found smooth and shining and of a dull lead colour. At the top three or four large vessels, some of them (to use that expression of universal comparison among anatomists) as large as a *crow quill*, stood somewhat prominently out from its surface, radiating from a common centre, and from which, on being squeezed, a jet of black blood was made to issue. I could not discover any rudiments of an umbilical cord, or anything which looked like a fœtus, neither had anything of the kind been seen since I was first called; and, supposing the patient to have told the truth (and I doubt not she did, as she still insists that she was pregnant) nothing had passed before. The substance under examination I supposed to be the remains of a placenta and its membranes; the outer one the shaggy chorion and the inner one the amnion. From this time the patient did well. The lochial discharge, as I termed it, continued in moderate quantity for seven or eight days; there was little soreness of the bowels, and the patient rapidly recovered.

Supposing this case had been made the subject of a judicial examination, and the question had been put, Was this woman pregnant? what should have been my answer?

In favour of the affirmation of pregnancy are the following reasons:

1. There was an acknowledgment of frequent previous sexual intercourse.

2. The patient had felt the nausea and other sensations usually attendant upon her former pregnancies.

3. There had been an enlargement of the mammæ and a deeper colour of the areolæ about the nipples, since the commencement of the reputed pregnancy.

4. There was a discharge of a colourless fluid after the last operation for procuring the abortion, for eleven days, up to the period of the hemorrhage.

5. There was thrown off from the uterus what had the appearance of a placenta and its membranes.

6. There was a discharge following their expulsion, for seven or eight days, and which was presumed to have been the lochial discharge.

7. The patient, who had been six times pregnant before, expressed no doubts of her present situation.

In favour of the negation of pregnancy are the following reasons:

1. No fœtus had been discovered by myself, and, if the patient told the truth, none had passed off when I was absent or before I was called.

2. There were no remains or rudiments of an umbilical cord attached to what I have called the placenta.

3. The mammæ were now flaccid and the areolæ pale.

That the fœtus had been expelled before I was called, or while I was absent, and concealed by the mother or the attendant, I do not believe, as the patient, in that case, having so strong a motive, would, in all probability, have denied the pregnancy, which she does not to this day. But if she was pregnant what became of the fœtus? Might it not have been destroyed by the process of decomposition and passed unnoticed among the numerous coagula at the time of the abortion? That it was thus disposed of I am inclined to believe. The patient, at most, could not be more than three months advanced in pregnancy; it was her belief that the ovum had been, for some time, dead, before the incursion of the hemorrhage; this, with what had been done to dislodge it, together with the flaccid state of the breasts, for some time before the flooding, seems to confirm the supposition of pregnancy. If this state of the case was true, the fœtus was not more than two inches long at the time of its death; little or no bone had been formed, and, after the rupture of the membranes, for eleven days preceding the hemorrhage, it was placed in very favourable circumstances for its rapid decomposition.

20. *Delivered in what month of the year.*—Of the 932 children, the months in which they were born were returned in 838 times, which may be seen by an inspection of the following table. As will be seen, the births were distributed, in pretty nearly equal proportions, among the different seasons of the year; proving that the common notion prevailing in this region, that there are more births in summer than the other seasons is not correct. The table is to be read thus: 84 children were born in January, 67 in February, and so on.

Months of the delivery of 838 *children.*

Months,	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
No. of Children,	84	67	85	50	71	57	75	73	80	57	66	73

The following table exhibits the distribution of the births among the different seasons of the year, as follows:

Seasons of the delivery of 838 *children.*

Seasons,	Spring.	Summer.	Autumn.	Winter.
No. of children,	206	205	203	224

Of the individual months, March furnished the largest number, 85; while the succeeding month, April, furnished but 50, the smallest number.

The question which was respectfully submitted to the Malthusians for solution, in a former communication to this journal, on the *infrequency* of births in the month of April, (the first day of which is emphatically the *moving-day* of the universal Yankee nation) yet remains unanswered.

21. *Delivered at what hour of the day.*—Of the 932 children, the hour of birth was noted in 844 instances, as may be seen by the following table. By it we learn that 440 labours were completed between midnight and mid-day, leaving 404 to be accomplished in the remaining half of the twenty-four hours. Between 6 o'clock P.M. and 6 o'clock A.M. 456 labours were completed, leaving 388 to be accomplished in the remaining portion of the twenty-four hours. The last collocation furnishes 68 more cases for the night than the day time, equal to 54 per cent. for the night and 46 per cent. for the day. By the hour, is intended that the deliveries were finished *nearer* that hour than any other. The results of the table corroborate the popular opinion, that more children are born in the night than the daytime. The table is to be read thus:—58 children were born at 1 A.M., 38 at 2 A.M., and so on.

Hours of the birth of 844 *children.*

Born A.M.,	1	2	3	4	5	6	7	8	9	10	11	12
No. of children,	58	38	44	36	49	26	34	30	29	42	34	20
Born P.M.,	1	2	3	4	5	6	7	8	9	10	11	12
No. of children,	30	34	32	47	27	29	30	33	35	36	45	26

22. *Twins.*—Of the 927 labours, five were cases of twins, thus increasing the number of children to 932. By the following table it will be seen that in four cases there were two placentas, one for each child; while in one case there was one placenta with two cords. No placenta was delivered until the birth of both children. The following table exhibits an analysis of these cases:

Analysis of 5 cases of twins.

No. of cases.	Age when married	Present age.	No of Pregnancy.	Hours in labour	Presentation.	Full time or not	Sex.	Weight.	Alive or dead.	Died in first month.	Interval between births.	No. of placentas.
1	20	27	4	10	V.	9	F.	5¼	A.	D.	15	2
					B.		F.	4¾	A.			
2	24	36	5	4	V.	9	F.	7	A.		15	2
					V.		M.	6	A.			
3	24	40	7	24	V.	9	F.	7¼	A.		15	1
					V.		F.	7¾	A.			
4	17	37	9	22	V.	9	M.	7	A.		25	2
					F. to p.		M.	7¾	A.			
5	28	36	2	12	V.	9	M.	6¼	D.		30	2
					V.		F.	8½	A.			

The breech and the face to the pubis presentations occurred, in both instances, in second children. No difficulty was experienced in their delivery. The average weight of the children was $6\frac{3}{4}$ lbs. The mothers all had rapid recoveries.

23. *Instrumental deliveries.*—Of the 932 children 5 were force delivered, viz.: 2 were delivered by the aid of the blunt hook after the operation of craniotomy; 1, by the help of the forceps; 1, by the lever, and 1, manner not returned. The following table exhibits the ratio of instrumental deliveries, occurring in the practice of different accouchers:

Ratio of instrumental deliveries by different accoucheurs.

Ac coucheurs and their residence.	Dr. Carus, Dresden.	Dr. Ritgen, Geissen.	Dr. Kluge, Berlin.	Drs. Minden and Merrem, Cologne.	Prof. Andrée, Breslau.	Naegelè, Heidelberg.	Dr. Voigtel, Magdeburg.	Dr. Kustner, Breslau.	Dr. Siebold, Marburg.	Dr. Boer, Vienna.	Madame Boivin, Paris.	Dr. Merriman, London.	Dr. Bland, (West. Gen. Dis.,) London.	Dr. A. B. Granville, do.	Dr. Beatty, (New Hospital,) Dublin.	Dr. Clarke, (Dub. Hospital,) do.	Dr. Collins, do.	Dr. Metcalf, Mendon, Mass.
Ratio; 1 in every	13	9	15	12	35	28	5	36	9	96	183	98	158	80	99	162	114	187

One of the cases in which the operation of craniotomy was performed, was reported in the article formerly published in this journal. The following account of the other is condensed from a communication made to the Union Medical Association, before referred to.

Mrs. W. M——— was taken in labour with her first child, Saturday, Feb. 28, 1841, at 10 o'clock P.M. She is of small stature, and her age 36. Has been married eight years, and has always enjoyed good health up to the present time.

Sunday, March 1st. I was first called at daylight. Found the patient quite comfortable and sitting up, the pains being slight and recurring after long intervals. On inquiry, found the membranes had been ruptured before my arrival; only a small quantity of water followed the rupture. The patient being so comfortable, an examination, per vaginam, was delayed for about two hours; when, on introducing the finger, the head of the child was readily distinguished. The presenting part was easily raised by moderate pressure, and quite a flow of the liquor amnii followed. A few pains succeeded the examination and were found to partake but little of the expulsive character. From the first, I had noticed that the uterine tumour was more pointed and cone-like than any case I remembered of noticing before. Applying the hand to the abdominal parietes, the uterus seemed to be closely contracted about the child, and to stand up very much in the shape of a sugar-loaf. While making an examination soon after this, and, while raising the head upon the point of the finger, a noise,

like the escape of air, was distinctly recognized both by myself and the attendants. At the same time a fetid odour was perceived, which also was present during the remainder of the labour. I expressed my conviction that the child was dead; but the mother affirmed that, within a short period of time, she had plainly felt its motion, and she was not to be convinced that she was mistaken. Applying my hand to the abdominal tumour, for some minutes, I was satisfied that she had taken an occasional spasmodic action of the abdominal muscles or of the uterus, for the motions of the child.

From this time until 9 P. M. the pains continued very feeble, not occurring oftener than once in twenty-five or thirty minutes. The patient continued cheerful; sat up or laid down as suited her pleasure. From this time until *Monday, March* 2, at 1 A.M., the pains increased in power and frequency, though they were not, at any time, of a character to be called striving; nor did they recur oftener than once in eight or ten minutes. The head had now become fixed in the bony pelvis, the vertex being the presenting part, and the face turned towards the left sacro-iliac junction. From this time until 7 o'clock, P.M., the pains continued to decrease in force and frequency, and, by 8 o'clock, had entirely ceased.

Tuesday March 3*d*, at 3 A.M., concluded to administer a dose of ergot. Its specific operation was noted at about the expiration of twenty minutes; but the contractions it superinduced were not striving or expulsive. The effect lasted about fifteen minutes, during which time the pain was pretty constant, slight remissions only being noticed. There was now occasional vomiting; induced, as I suppose, by the distension of the stomach with drinks aided by the ergot. At 9 A.M. the urinary bladder, which had become quite distended, was thoroughly evacuated by the natural efforts of the patient.

Finding her now very comfortable, able to walk from one room to the other without assistance, and getting a refreshing nap now and then, I concluded to wait for further efforts of nature, hoping the process would yet be accomplished without my interference. At 3 P.M., being sixty-five hours from the commencement of the labour, I again administered another dose of ergot. This brought on a teasing pain of fifteen minutes' duration, but without producing any change in the position of the child's head.

Despairing of seeing the delivery accomplished without instrumental aid, I now proposed that counsel should be called in. Dr. Willard, of Uxbridge, was soon joined with me in the case. After an examination, per vaginam, and a review of the whole case, and considering the protracted length of labour, it was concluded to make one more trial with the ergot; and, in case of its failure to accomplish the object, to proceed at once to the instrumental delivery of the child. The ergot was again administered in an increased dose, but with no better success than before. After vainly attempting to accomplish our object with the lever and forceps, the child's head was opened, the brain evacuated, and the delivery completed by the aid of the blunt hook. The womb contracted readily and strongly upon the child, as it was slowly delivered; and, after waiting ten or fifteen minutes, the placenta followed without any difficulty. The operation lasted some twenty minutes, but without any considerable pain to the patient. But little flooding followed, and, after the exhibition of an anodyne, the patient was put comfortably in bed.

An examination of the child proved that it had been, for some time, dead; as the cuticle slipped easily off from any part of the body. Scattered about,

upon various portions of the surface, were quite a number of vesicles, filled with bloody serum, seated upon livid bases. The cadaverous fetor was also very sensible, so as to be readily distinguished in all the adjoining rooms.

Had labour pains of ordinary intensity been present in this case, I doubt not the delivery would have been completed without the resort to artificial means, and within the first twenty-four hours from its inception.

24. *Period between the delivery of the child and the expulsion of the placenta.*—The following table exhibits that period in 523 cases out of the 927 births, and is to be read thus: the placenta was expelled 166 times in 10 minutes, and so on.

Period between the birth of the Child and the expulsion of the Placenta.

Period,	10	15	20	25	30	35	40	45	50	60	1¼	2	2¼	3	9	24
No. of placentas,	166	272	29	17	13	3	7	2	1	3	2	3	2	1	1	1

No case of retention of the placenta was followed by any unfavourable termination of the labour. Those retained nine and twenty-four hours were returned by my correspondents without any remarks. I am aware that many physicians do not wait so long, as the shortest period set down in the above table, for the delivery of the placenta. I consider, however, that it is safer to wait a little while, so that the uterus may have time to contract upon the placenta, and thus render the patient less liable to hemorrhage after its expulsion. Of course, if the hemorrhage is urgent, after the delivery of the child, I do not wait so long as I otherwise should, but am governed by that circumstance when to interfere in the process.

25. *Placentas, force delivered.*—In 838 cases where the delivery of the placenta was noted, it was force delivered in six cases. Of these, one was delivered at the end of three hours without flooding; three, soon after the delivery of the child, on account of that accident, one of which was upon the edge of the os uteri, and two by reason of an hour-glass contraction. One of these last occurred in a patient forty-three years of age, in labour with her first child. After waiting some forty or forty-five minutes for the delivery of the after-birth, and finding, by external examination of the abdomen, that the uterus was irregularly contracted, and the hemorrhage increasing, I passed my hand through the vulva and os uteri, as far as the contraction, without much difficulty. Here I was stayed for some time, as the contraction was close and not readily disposed to yield. By degrees, however, the contraction was overcome; the placenta, lying loose, was readily grasped, and slowly and safely delivered. After the contraction was relaxed, I did not perceive that there was any disposition to its return again. The patient suffered considerable pain during the operation, and, towards its close, became quite faint and exhausted. The guarded exhibition of stimulants soon produced a moderate reaction; the patient rallied and was soon quite comfortable. No untoward accident afterwards occurred, during her recovery. The other case of hour-glass contraction was followed

by puerperal fever; not, probably, however, on that account, as the patient was living in a region where there was, at that time, an evidently epidemic tendency to that disease.

26. *Previous children.*—Of the 927 cases, the previous children which the mothers had given birth to was noted in 377 instances. The result of this inquiry is embodied in the following table.

Previous Children of 377 *Mothers.*

	Total.	Total dead.	Total living.
No. of children,	1176	287	889
No. of males,	662	186	476
No. of females,	514	101	413

It will be understood that the previous children were reckoned from the last accouchement. Of the males, 28 per cent. had died, while, of the females, only 19 per cent. had died, thus showing the mortality to be nine per cent. greater among males than females. Among the whole number of the previous children, 1176, there were ascertained to have been but a single pair of twins.

27. *Concluding Remarks.*—I am aware that the pages of the preceding communication contain little that is calculated to awaken the wonder or excite the curiosity of those who look into books, with the expectation of being startled into amazement, by the rhetorical embodiment of some bold speculation. The fire must be Promethean, or it kindles no emotion in those who fly with the wings of Icarus. "Includere gemmam in scyphis aureis," or truth, with all her efforts, gets but a sorry company of listeners. But once in an age, suppose some wonderful problem is solved, per saltum; still, progress, in the main, must be slow, plodding, and accomplished by degrees. For the mass of travellers, who are striving for advancement on the highway of knowledge, amongst all its astonishing inventions, the ingenuity of man has yet achieved no railroad conveyance for the body, and no telegraphic communication for the mind. The multitude, then, must content themselves with the *old* way, uninviting and rugged though it be. They must content themselves with storing up isolated and disjointed materials, without stopping to inquire who is to win the crown of immortality, by a philosophical induction from their fortunate arrangement and comparison.

In the present communication I have designed to collect and lay by for future use, a few facts connected with an important branch of our profession. Trusting that some good may be accomplished by the labour I have bestowed upon their arrangement, they are respectfully submitted for the consideration of those who are engaged in the practice of the obstetric art.

Mendon, June 1, 1847.

ART. II.—*A very early Human Ovum, presenting the ununited folds of the blastoderma about to form the amnios.* By MYDDELTON MICHEL, M. D., Lecturer on Anatomy and Physiology, Charleston, South Carolina, [with a plate.]

IN endeavouring to establish the laws which regulate the phenomena of development—that deeply interesting topic of philosophical anatomy—all the forms of organic life have been arrayed in a vast field of observation and research.

Speculative inquiries, yielding to the rigour of experimental investigation, have found a just interpretation in the interesting facts which now enrich this department of physiology, and which, interwoven as they must soon be in one fundamental plan of organization, will constitute a new era in the science of which they form a part.

In this newly, and only partly explored province, though our knowledge has progressed with almost electrical rapidity, thanks to the labours of a Baer, Coste, Serres, and Barry, yet no small and fertile source of discovery and instruction still remains as an allotment for the assiduous inquirer. Attention was first directed, as was very natural, to the development of organisms the more readily obtained and promising the surest results, rather than to such as should more properly have ranked as the type of comparison, as the guide in the chain of complex phenomena; it does not therefore surprise us, that the first discoveries in these extraordinary organic operations were the result of experiments instituted on the domestic fowl by Baer. Subsequently, these important facts were more correctly interpreted by experiments made in the higher series of mammals by Prof. Coste, while they in their turn received that confirmation which a modification and simplicity of development, observable even among the invertebrates, seemed afterwards to justify. However, our imperfect knowledge of these organic processes in some classes of beings, still constitutes a veritable interruption in the series of observations which this plan proposes. There are many of these classes again of which very little is known and less devised, that would certainly reveal important truths—we may instance the marsupiala— while all our knowledge of other developments, where the usual means of research are impracticable, are inferences drawn from analogy, being a dialectical process the more irreproachable, the more extensive our acquaintance with the rest of the series, though not itself possessed of all the share of proof which the gravity of anything like fallacy would demand. To this category belong whatever observations have hitherto been made concerning the earlier periods of human development, from the impracticability attending any empirical examination of the question. The similarity of some of the transitory stages of animal development, to the subsequent developing acts of the human embryo, as also the appa-

Fig 1.

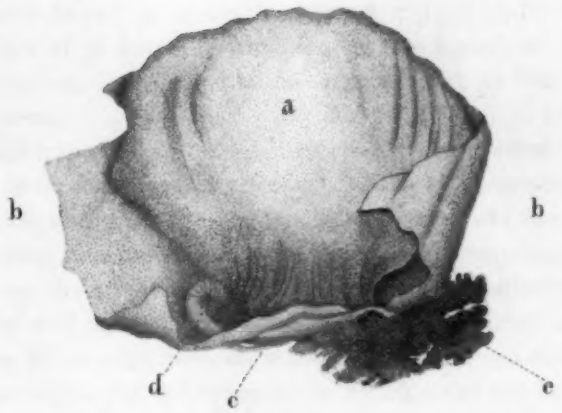

Fig 2.

Fig 1. a. *Umbilical vesicle, its wide opening into the embryon is clearly seen.*

bb. *Outer layer of blastoderma cut through and reversed to bring the umbilical vesicle into view.*

c. *Back of embryon destitute of any covering. The cephalic extremity* d *is received upwards beneath a fold of the blastoderma which is seen surrounding it as a nebulous outline.*

e. *Villous piece of organizable lymph that was inseperably connected with the ovum.*

Fig 2. *Size of ovum after soaking in alcohol.*

Auctor ad naturam delineavit. *W. Keenan. Sc.*

rent identity of their primeval germs—the initials of creation—fully authorize the conclusion, that the intervening stages in the human species catenate with those of other animals, without implying, on that account, that man is the integral expression of any one of the series, an opinion as erroneous as unscientific, divesting the truths of their ennobling bearings, and justly to be repudiated as possessing the most dangerous tendency.

While I exonerate myself from all share in divulging opinions hostile to existing sanctions, under the form, whatever it be, which they may assume in this or any of my future contributions to the subject of organic evolution, yet I so far protest against the habit of interpreting facts to support particular views, instead of relying on the correctness of these, as the means of their defending themselves, that I will give a further exemplification of this law of progressive formation by the history of what I consider to be the earliest human ovum on record, next to that described by Allen Thomson.

This curious specimen of which I am in possession, is extremely valuable, as its condition is perfectly normal—a circumstance so rare in cases of abortion, that most specimens of early human ova have been lost to science, by falling into the hands of those who, not being familiar with the subject, have by their descriptions given rise to the greatest variance of sentiment. It is of still greater value as verifying the accuracy of that singular parallelism in development, of which it is a glorious exemplification, it being impossible as yet to distinguish to which order the being appertains; while its early age is a further proof of the identity in the process which evolves the membranes, as well as of the synchronical order in which they appear. These circumstances justify my regarding an account of this specimen as a contribution towards supplying the gap existing, among the observations made on the human ovum.

It was in the month of June last (1846) that I was consulted by a gentleman of this city, in behalf of his wife, as he was desirous of ascertaining the nature of a slight sanguineous discharge, attended with much pain, which had greatly inconvenienced her, then nursing a child at the breast. A clot of blood of singular appearance that had been eliminated, was more particularly the object of his visit, knowing, as he stated, that my attention was directed to the subject of ovology, and believing the accident in question to have occurred in consequence of conception.

The small quantity of blood passed, being scarcely in relation with the extreme inconvenience that ensued, was an objection to its being a return of the menstrual act, as this was unattended habitually with any uneasiness; but the very delay in the re-appearance of the catamenia, and the child at the breast seemed also to militate against the probability of conception, and consequently of abortion having taken place, though I inclined to this last opinion. A simple inspection of the regular shaped clot seemed to favour a belief which a more careful examination was about to corrobo-

rate. The gentleman's testimony positively implied that if it were anything of the kind, it must surely be very young, and the details which were given were of a nature not to be questioned.

Therefore, with an anxiousness which so unexpected an occurrence was calculated to excite, the substance was submitted to ablutions with alcohol and water, and by removing the clotted blood, soon exposed a small fleshy body to view. As my curiosity was aroused by the discovery of this little body, I proceeded to make an inventory of its contents, with all that precaution which should be the invariable prerogative of so small, so delicate an object. Resorting to another vessel containing diluted alcohol, the better to examine this substance, a small incision was made in a smooth, semi-transparent and spherical portion projecting beyond the rest, which I then recognized to be the reflected portion of the decidua, inasmuch as a partly transparent vesicle resembling an early ovum lodged within this receptacle, passed out very readily, floating in the surrounding liquid. So exceedingly delicate was this second object of attention, that I deemed it advisable to leave it awhile, to become strengthened in its structures by the action of the alcohol before I should proceed. When a further examination was instituted, I was enabled to determine what follows, and had the pleasure of exhibiting the same to Professor Prioleau of this city.

A very short contact with the alcohol brought the condition of this little ovum very plainly to view, and at once pointed out the fairest resemblance to the ovum in the uterus of a rabbit. Indeed, a blastodermic formation had already taken place, of which I was not apprized, until by the imbibition of alcohol its double layers were separated. The vitelline membrane had disappeared, the chorion which must have somewhat advanced had been left behind, for around the ovum hung an araneous structure, which appeared to be the incipient bonds of its connection with the chorial covering from which, in all probability, it had been removed.*

Though this flocculent film existed more particularly upon one side, I am not prepared to say, whether this really corresponded to a part of the chorion, nor had it any more the appearance of chorial villosities than have (in my opinion) similar projections of the vitelline membrane in the rabbit. Through the transparency of the ovum could be distinguished the inner layer of the blastoderma, as an encased sphere, forming the umbilical vesicle. In turning over the ovum, there appeared to be on one side a thickening of its structure, as if a bit of organizable lymph was connected with it just at this spot, but on cutting through and reversing the outer layer, this appearance proved to correspond with the first and earliest condition of the embryon. The umbilical vesicle towards the embryon was but slightly constricted; this was its principal feature, no vascularity being per-

* I regret that having thrown away the decidua with the clotted blood in which it laid, I deprived myself of the only means of determining the above question.

ceptible. The embryon had advanced in development further than the *nota primitiva* or *tache embryonnaire*, as it exhibited a cephalic and caudal extremity. The umbilical vesicle entered widely on the anterior surface of the embryon, but I could discover nothing which indicated the presence of an alimentary canal, consequently no allantois was as yet formed; on the lateral surfaces not the most remote sign of thoracic or abdominal tubercles were discoverable. The ovum was evidently at that period of development, in which the outer layer of the germinal membrane begins to fold itself over the back of the embryon to constitute the amnion. It was to verify in the human ovum the commencement of this interesting process that I felt most desirous, though at first from the difficulty attending its detection, I supposed it not to have commenced, but on tilting the embryon upwards with the point of a needle to bring the light to bear upon the cephalic extremity, I could then observe a nebulous outline following its convexity for a little distance backwards, which was plainly the fold in question. It had advanced so little over the embryon, that much of its back laid bare against the coagulum of lymph already mentioned, but I could here readily pass the head of a very small pin beneath the cephalic hood. The caudal hood adhered to the coagulum, and consequently was not interfered with, lest the specimen might be injured before I delineated it. The back of the embryon presented a slight groove, though the vertebral canal was certainly not open. (*Vide* Plate.)

Here is the most beautiful example of human development ever seen; unexceptionably similar to other species of ova at the same period of their changes. Its disconnection with the chorion, which must have been in an incipient stage of formation, implied the absence of the allantois, a structure as essential to the nature of the chorion as it is indispensably requisite in conveying blood-vessels to it; no amnion existing inferred the early transformations of the germinal membrane and the extensive umbilical opening whose obliteration coincides with the perfection and completion of the amnion; while, again, the entire progress of the embryon accorded with the succession in which the membranes were being formed. Mindful, indeed, of the rapidity of development after the egg reaches the uterus, we cannot suppose the present ovum to have sojourned more than 60 to 80 hours in that cavity, as it had advanced but little further than the unfolding of the blastoderma.

If now we review the several descriptions relating to the earliest periods of embryonic formation, they all, with one exception, will prove further advanced than that which we have just had under notice.

Sir Edward Home and Bauer* in 1817, attempted the description of a very young human ovum, in a paper obnoxious to the charge of such unbounded ignorance of the subject canvassed in it, and such painful blind-

* Philos. Trans., p. ii. p. 252, 1817.

ness to the truth, that we are surprised at the currency it has for a long time received, and only allude to the publication as valuable in a historical point of view. This was clearly no ovum, and if it had been, the very means employed in the examination would have radically destroyed it.

On the authority of Dr. Allen Thomson, I am disposed to regard the fifty ova described by Dr. Pockels* (only four of which were between eight and sixteen days) as all of a later date than that specified, as the drawings show the evolution of structures which cannot accord with the assumed age.

The specimen recorded by Edward Weber in 1830, would certainly be of a most recent date if there were not that variance of account which invalidated all testimony. In one publication it is stated that an ovum of the earliest development was present; while another account places its existence in the equivocal light of a possibility, on the plea of an ovarian vesicle appearing as if it had just discharged its ovum. It is but justice to Weber to state that I am indebted to the excellent paper of Allen Thomson† for an account of this ovum, and it should be stated that neither Allen Thomson nor myself has seen Weber's original communication. Nevertheless Bischoff who probably has carefully read it, assigns very little value to it.

In 1833 Velpeau‡ described three human ova. Two of these were diseased, and I am inclined to believe were of a certain development, for he first speaks of their being composed of a simple vesicle, and that this possessed a villous appearance, though there were no traces of an embryon. This involves some considerable obscurity if not an impossibility, unless we accept these as examples of morbid condition.

The other ovum is the well known and valuable specimen furnished him by a midwife of Paris during the publication of his work on "*Ovolagie Humaine.*"

But this remarkable ovum was known to be positively thirteen days old. There was an amnion enveloping the embryon; an umbilical vesicle completely formed, and a chorion covered with flocculi. The development of the embryon, though by no means clearly or accurately described, must have coincided with this advanced condition of its membranes.

Professor Muller, in his Archives for 1833, mentions an ovum much farther developed than such as we are considering. With regard to its age I am disposed with Baer and Wagner§ to compute it at twenty-five days, though Muller himself places it at thirty-four days. The embryon was rapidly advancing, branchial clefts and arches were recognizable, and a complete evolution of its membranes had already occurred.

* Heft. xii. Oken's Isis, 1825.

† Edin. Med. and Surg. Journal, 1839, vol. 52, p. 119.

‡ Ovologie Humaine, p. 77, 1833.

§ Histoire de la generation, R. Wagner (traduit par Habets) p. 147.

With reference to Mr. Wharton Jones'* history of an ovum, which Dr. Thomson regards "as one of the earliest, if not the earliest human ovum, that has been accurately described," there appear to exist difficulties scarcely reconcilable with our present information of ovology. Details of an ovum are given belonging only to such as have just reached the uterus. Now those who have experienced the difficulties attending the examination of the ova of rabbits in a similar situation, who know their extreme delicacy, when it has been our good luck to surprise them in the primitive transformations of the germinal membrane, must hesitate to regard with confidence an occurrence open to so many sources of error as the one related by Mr. Wharton Jones. It is stated that Dr. Mackenzie first fell in with this early example of human development. It was lodged within a perfectly formed decidual membrane which came away from a patient of his. After removing the ovum which was "*the size of a marrow-fat pea*," he describes it as presenting a "*shaggy villous surface on one side*," which clearly shows it to have been the chorion. Indeed it was accepted as such both by Drs. Mackenzie and Jones. The former punctured it and perhaps passed the instrument, as he says, "*through the amnion by which some fluid escaped*," adding "*that nothing more was attempted.*" To say the least of such a manœuvre, it was treating the ovum with very little respect, and that "*nothing more was attempted*," seems a kind consideration for its condition, if we suppose a moment that it belonged to the early date alleged by Mr. Jones. But this treatment was nothing to that which it ultimately underwent. Dr. Mackenzie sent it to Cork, where Mr. Jones received it in good order after its journey of perhaps three hundred and fifty miles. It is equally positive that delicate as the specimen might have been, it was laid aside for five months, for from Mr. Jones' own account, he examined it "*in the spring of* 1836;" now Mr. Mackenzie's letter containing a description of it is dated November 29th, 1835. Again, Mr. Jones must himself have entertained doubts as to the true age of this egg, as we may infer from a subsequent letter from Dr. M., referring to this very point in which he writes: "*The ovum in question I consider as three or four weeks old. The lady had missed one menstrual period, and thought herself four weeks gone.*"

In presence of these considerations it is difficult to share in an opinion which regards this ovum as having been at its earliest evolution, or to admit with Mr. Jones that "*the embryon had not yet appeared, though the vesicular blastoderma was undergoing the preparatory changes.*" An ovum at this period of development would have required the utmost precaution and delicacy to secure it for microscopical investigation, demanding immediate examination, when it would have revealed unequivocal signs of its age. It would have presented a vitellary membrane invested with a re-

* Philos. Trans., p. ii. p. 339, 1837. Observ. 5.

duced layer of the albumen acquired in its transit through the tube, and the vesicular blastoderma would have filled and lined the inner surface of the vitellary membrane, it could not have possessed a chorion *shaggy* and *villous* on any side, and much less a germinal membrane occupying, as we read, but a corner in the cavity of the chorion, "*imbedded in a fine gelatinous cellular tissue.*"

I am disposed to place a different construction upon this matter, as a circumstance not easily forgotten recurs to my mind, and perhaps will explain it.

In 1845, while at Paris, I was not a little astonished upon examining the uterus of a rabbit, on the twelfth day after gestation, to find in the right cornu, an ovum having all the appearance of being at its blastodermic evolution, while a perfectly villous chorion formed its outer envelop, though no traces of the embryon were present.

Five corpora lutea existed, and the other ova in the uterus, strange to say, were all in the same condition. Professor Coste, in whose laboratory I enjoyed the friendly privilege of conducting my experiments, who also lent me that assistance which his position in science makes me regard as a distinguished honour, observed that he had frequently met with such examples. Struck by disease and arrested in its development, the embryon, amnion, &c., had been absorbed, only leaving a somewhat advanced chorion and the serous layer of the germinal membrane which had not yet adhered to the inner surface of the former. It is not improbable to my mind that such was the nature of the case recorded by Mr. Jones.

In this manner we could account for the apparent inconsistency between its age and its condition. Its size, advanced chorion, resistance to exposure and the variance of opinion concerning its age would then find their proper interpretation.

For a valuable account of another embryon (1837) we are indebted to Professor Coste,* who gives two beautiful drawings representing the most instructive details. This embryon belonged to a late period, comparatively speaking.

A chorion and amnion were formed, the allantois was highly developed, slightly adhering to the inner surface of the chorion through means of the *magma réticulé*, or gelatinous substance enveloping the former. Muller,† who has re-copied these beautiful figures, computes the age of this ovum at sixteen to twenty days; but as Professor Coste in his work specifies no particular period, I myself consider it younger, regarding Velpeau's case as a criterion of development at the thirteenth day.‡ The authority of Vel-

* Embryogénie comparée, vol. i. p. 227, 1837, and Atlas, Pl. III. figs. 4 and 5.

† Elem. of Physiology (Eng. Trans., Baly), vol. ii. p. 1585, 1842.

‡ I am uncertain whether Professor Coste ever expressed his opinion concerning the age of this embryon. He showed me one, which he estimated at twenty-five days, much farther advanced, and was kind enough to allow my having a drawing made of the same.

peau's statements is to be relied on with implicit confidence. In both cases the embryons were enveloped in a perfectly formed amnion; the umbilical aperture in both cases gave passage to the pedicle of the umbilical vesicle; and though Velpeau does not admit an allantois in the human ovum, we know that he described the same while referring to what he terms the "corps réticulé."

At a later date, in 1839, we meet again with the history of three early ova which came under the notice of Dr. Allen Thomson.* Here we should pause before two of these specimens, which at once attract undivided attention, being, as I would say, at the same period of formation. The first belonging to Professor Cumin, of Glasgow, who submitted it to Dr. Thomson, was truly, as he says, "at the very earliest stage of its development, for it lay with its abdominal side nearly flat on the surface of the umbilical vesicle, the abdomen presenting no appearance of intestine as yet, but merely a long and shallow intestinal groove, which formed a common cavity with the interior of the yolk-sac. Around the intestinal groove, the germinal membrane of the fœtal parietes was continuous with that on the surface of the yolk-sac." The second was in the possession of Dr. Reid, of Edinburgh. Of this Dr. Thomson says, "we have here the yolk covered by the layers of the germinal membrane forming the yolk-sac or umbilical vesicle; the embryon consisting principally of the rudiments of the cerebro-spinal axis and the intestinal groove, and in which it may be supposed that the heart also had been formed in its first or simplest condition,—a state of parts, which, if such a comparison can be made, approaches to that existing in the incubated egg of the fowl at the thirtieth or thirty-fifth hour."

For some time, I believed I was the first who had the enviable opportunity of witnessing the earliest steps of development in the human species, but the details given above by Dr. Thomson, are signal proofs of a somewhat earlier period than that which I have described. Here, as in my own case, no allantois or intestine had formed; the abdomen of the embryon lay flat, or nearly so, upon the umbilical vesicle, but slightly constricted, and this same filled the cavity of the serous layer of the blastoderma; the chorion, like mine no doubt, was but partly villous; but, unlike what I have described above, the cephalic and caudal extremities were scarcely discernible; the *laminæ dorsalis* were distinct, having not yet united to form an envelop to the rudiments of a cerebro-spinal axis, itself visible; while we are told the outer layer of the blastoderma was continuous with the fœtal parietes and yolk-sac.

Though I cannot but yield the precedence to Dr. Thomson in the face of these facts, yet I may question whether the advantage thus obtained diminishes in any respect the value of the case I have recorded. For a long time the mode of formation of the amnios was a problem involving the greatest

* Edinburgh Med. and Surg. Journ., vol. lii., p. 129, &c., Nos. 1 and 2 of Pl. II.

obscurity, and in the human subject until the present moment, I may say, was altogether an analogical speculation. Dr. Thomson, aware of this, merely inferred the process to be the same as in other animals, stating "that no observations had as yet been adduced, in which the *ununited* state of the cephalic and caudal folds of the amnios had been seen in the human fœtus." This, and this principally, is the value of the specimen I examined, in which these very folds were yet separate, and beneath the cephalic one of which I could even introduce a small instrument. I therefore took every care to exclude error. The only source of error might have been the rupture of the adhesion of the amnios, to the serous layer of the blastoderma in the accidental separation of the chorion, but the amniotic opening on the dorsum of the embryon had not a lacerated appearance, but was a veritable fold continuous with the outer layer of the blastoderma—the structure to which it owes its existence. This is what I have endeavoured to represent in the plate as accurately as my limited skill permitted, for it constituted the prominent feature, establishing the method in which the amnion is evolved in the human species, showing it to be identical with what occurs in other classes. I will acknowledge, therefore, that the fortuitous circumstance of meeting this plicated condition of the blastoderma, indemnified me for the disappointment experienced while perusing the memoir of Dr. Thomson. Throughout the paper, I believed that while the embryon was certainly less developed than in my specimen, the membranes were in the same condition in which I had seen them, until I discovered that an amnios had not yet formed, nor was it even commenced.

In the beginning of this paper, it is true, I allude to the ovum as a perfectly normal example, and still opine it is, as far as is compatible with an abortion, when it stands for reason, that an arrest of development occurs not abruptly, but by those slow gradations of decay, which, interrupting the several parts in their successive progress of organization, eventually leave them out of relative unison with each other. Hence, it appears that the embryon was somewhat further advanced than the condition of its amnios would justify; certain it is that no *laminæ dorsales* were visible, though a vertical depression was evident, and yet no intestine or heart was developed, which latter (though I did not examine with reference to it), would have forced itself upon attention had it existed, nor is it probable that such was the case, as there was no evidence of vascularity, no *area vasculosa*.

Bischoff* states that Volkmann (1839) has spoken of an early ovum; but the clavated villosities of a perfect chorion coinciding with a vesicular blastoderma, are sufficient indications to throw great doubt over the matter.

There are yet more cases on record, in which, though suspected, either no ova at all were detected, or when they did exist, offered a comparatively high degree of organization. We meet with interesting communications

* Encyclopédie Anatomique, vol. viii. 1843.

from Burns,* Stanley,† Burdach,‡ Wagner,§ Lee,‖ Baer,¶ two other examples by Allen Thomson,** in one of which a *corpus luteum* and decidual membrane were present, but no ovum, though he met in the uterus a vesicle so small and delicate "that it was destroyed as soon as touched;" and more recently in 1843 a doubtful observation by Pauk,†† who, examining the uterus of a young girl at the seventh day after supposed conception, found a Graafian follicle in a turgescent state about eliminating its ovum, and a caduca in an incipient stage; but no spermatozoa were discovered in the vagina, uterus or tubes. In opening the ovarian vesicle the ovum was lost. The woman was perhaps merely at her menstrual period. Again, other and less accurate observations belonging to abnormal conditions of development are recorded by Kieser, Sœmmering, Meckel, Autenrieth, and Hunter,‡‡ but these appertain to periods further advanced.

Such are the remarks which this interesting occurrence suggests, and which it was my intention to have offered much sooner for the press, had it been convenient.

ART. III.—*Isopathia; or, the Parallelism of Diseases.* By JOHN M. B. HARDEN, M. D., of Liberty County, Georgia; Correspondent of the Academy of Natural Sciences, Philadelphia, &c.

Tuberculous or Strumous Types.—Under the head of *Inflammatory Types* we have found that the chief characteristic of the diseases there considered, consisted in the existence in the blood, and subsequent deposition into the tissues of what has been called *plastic lymph*, which resulted either in the *carnification* of an organ or the *formation of false membranes.* To this mode of action Lobstein has well applied the term EUPLASY, and such formations may be styled *euplastic.* The diseases which we are now to consider under our present head are all connected by a similar characteristic, with this difference, however, that the products which result from the morbid action are not capable of a perfect organization, but, according to Lobstein, are either cacoplastic or aplastic, and in this way bear a near resemblance to some of those *purulent diseases* which we have already passed over.

* Edin. Med. and Surg. Journal, vol. ii. p. 1, 1806, and Anat. of the Gravid Uterus, p. 10.

† Med. Trans. of the College of Physicians of London, vol. vi. p. 414, 1820.

‡ De fœtu humano adnotationes, Leipzick, 1828.

§ Loc. cit., p. 146.

‖ Medico-Chirurgical Trans. of London, vol. xvii. p. 474, 1832.

¶ British and Foreign Review, No. 1, Jan., p. 238, 1836.

** Loc. cit., p. 122.

†† Archives Générales de Médecine, vol. iv. (4e Série) p. 80, 1844.

‡‡ Burdach Physiologie, vol. iii., p. 332.

Under our present head we propose to investigate three species of disease, which we regard as being perfectly distinct: these are, first Scrofula, secondly Carcinoma, and thirdly Hydatids and Entozoa generally; and it shall be our chief object to point out the *modifications* which these diseases may undergo while they remain *pathologically the same.*

The first species, then, which we shall take up, is scrofula. But what is scrofula? It must be confessed that it is a disease more easily described than defined, and when confined to the lymphatic glands upon the external surface of the body, it is readily recognized by the most careless observers. Its true nature, however, and the varied forms which it may assume in the same or different individuals, have not yet been clearly elucidated, and yet there are few diseases more common or fearful in its ravages upon the human race. It is to these points we wish now to direct attention, and although we cannot promise much to our readers from our individual labours, our highest object shall have been attained if our remarks shall bring to the consideration of the subject more competent observers.

From the investigations which we have been able to make of this disease, we think we may define it as follows: a disease connected generally with a hereditary predisposition, depending upon some fault in the functions of the organs of nutrition, and resulting in the formation and deposition of a strumous or tuberculous matter in the various organs and tissues of the body.*

Whatever may have been the views of different writers upon the pathology of scrofula, there must be very few who can deny it, at times, a constitutional origin. Broussais himself, who was probably the most hardy and strenuous advocate of the inflammatory and local origin of all diseases, has said in relation to scrofula, or more properly the tumours arising from scrofula: "Ils sont plus gros chez les sujets prédisposés aux irritations du système lymphatique:"† and he admits this *predisposition* in many places in his great work entitled "*Examen des Doctrines Médicales.*" Now, although we must not confound a simple predisposition with the disease itself, yet the predisposition being constitutional, the disease developed upon that predisposition must be constitutional also. Marjolin‡ has said of it that "it is a disease totius substantiæ of the body; no tissue or structure is exempt from its invasion;" and so constantly has it been found connected with a certain physical conformation, that many of our ablest authors have ascribed its origin in all cases to a general constitutional diathesis which they have called scrofulous. Such appears to have been the opinion of most of the older writers, together with Dr. Parr, Joseph Frank, Bayle, Armstrong, Andral, Laennec, Louis, Clark, Crichton, Lugol, Stokes, Barlow, and many others. But although this hereditary constitutional predisposition does exist, it by no means follows that scrofulous affections must necessarily be developed in every person so constituted, or that all

* Dr. Carswell supposes that "of all organs, and of all tissues, the mucous membrane is most especially the seat of this morbid production. Thus it is found in the mucous system of the respiratory, digestive, biliary, urinary and generative organs. It is also observed on the secreting surface of serous membranes, particularly the pleura and peritoneum, and in the cells of the cellular tissue: it often forms considerable accumulations in the lacteals and lymphatics, both before and after they unite to form their respective glands. It is also seen in the substance of the brain and cerebellum in accidental cellular tissue, and *in the blood.*"—*Med. Chir. Rev.*, vol. xxii. p. 367.

† Propositions de Médecine, 169. ‡ Med. Chir. Rev., vol. xxxv. p. 213.

persons not so constituted are necessarily *exempt*. This would, indeed, be running into the fatalism so much dreaded by Broussais.

Of the above characteristics of the disease, then, the most *important certainly* is the *formation and deposition of strumous or tuberculous matter*. Let us, therefore, consider its nature and its origin.

Dr. Rush* was of opinion that tubercles were nothing more than the natural mucus of the lungs which had become inspissated; but more modern observations have shown them to consist for the most part of a modified or vitiated form of albumen. "Ordinary tubercles," says Marshall Hall,† "contain about 98 parts of animal matter and 2 parts of saline matter; viz: the muriate of soda and the phosphate and carbonate of lime. In some cases they undergo a calculous transformation, and they then consist of 3 parts of animal matter and 97 parts of saline matters. This calculous transformation‡ is observed in the lungs, in the mesenteric glands, &c. It is opposed to softening."

Dr. Prout regarded scrofulous matter as "albumen imperfectly developed; Gendrin as a mass of albumen with excess of salts; Bredon considers it to be an albuminate of potash or soda. Boiling water and acids coagulate it when it has become somewhat softened."§ Boudet found, upon analysis, the following ingredients in tubercle: 1st, albumen; 2d, caseine; 3d, a substance presenting the characters of fibrine; 4th, a substance soluble in boiling alcohol (cerebric acid); 5th, oleic and margaric acids; 6th, saponified fat; 7th, lactic acid; 8th, lactate of soda; 9th, cholesterine. The ashes yielded chloride of sodium and sulphate of soda, together with phosphate and carbonate of lime and some silex and oxide of iron.‖ The following¶ is the mean of two analyses by Dr. Wright:—

1st, Fatty matter with oil globules - - -	11·69
2d, Gelatin, - - - - - - -	9·1
3d, {Phosphates / Sulphates / Muriates} {Lime / Soda} - - - -	6.85
4th, Carbonate of lime - - - - -	a trace
5th, Oxide of iron - - - - -	a trace
6th, Albuminous matter with fibrine - -	70·6

M. Thenard found, upon analysis, the following:—

1st, Animal matter (albuminous chiefly) - -	98·15
2d, {Muriate of soda / Phosphate of lime / Carbonate of lime} - - - -	1·85
3d, Iron - - - - - - - - -	a trace

* Med. Observations, vol. ii. p. 74. † Hall's Practice, p. 157.

‡ This calculous transformation of tubercles is a very interesting subject, and is, no doubt, similar to *mineral petrifactions* where the organic are replaced by inorganic substances, and shows how completely a disease may change its character in the course of years. When this transformation or *petrifaction* takes place, we have a *calculous* in the place of a *tuberculous disease*, which we will notice under the head of *podagric or gouty types;* and we should by no means adopt the conclusions of Dr. Prout, that "the strumous, lithic acid and gouty diseases are all the results of malassimilation of the albuminous principle, and often gradually run into one another. The gouty chalk stones of old age may be considered as little more than modifications of the scrofulous tubercle of youth."—*Vide* Am. Journ. Med. Sci., No. 12, N. S., p. 383.

§ Med. Chir. Rev., vol. l., p. 131.

‖ Am. Journ. Med. Sci., N. S., No. 17, p. 187. ¶ Ibid., N. S., No. 22, p. 454.

The chief organic constituents of tubercle, according to the analyses of M. Hasse* are—1st, fibrine; 2d, caseine; 3d, fat; with 4th, a small proportion of albumen. The inorganic compounds are—chloride of sodium, phosphate of soda, phosphate and carbonate of lime, oxide of iron, &c.

In relation to the chemical composition of tubercle Dr. Bennett† gives us the following summary and observations:—"In reviewing," says he, "the different analyses of tubercle which have now been given, we find—

"1. That tubercle consists of an animal matter mixed with certain earthy salts.

"2. That the relative proportion of these varies in different specimens of tubercle. That animal matter is most abundant in recent and earthy salts in chronic tubercle.

"3. That the animal matter certainly contains a large amount of albumen. Some chemists have also detected caseine, the existence of which is probable, others gelatin, the presence of which is more doubtful. The statement of Gueterboeck that it contains a peculiar animal matter (phymatine) has not been confirmed by other analysts. Fibrine and fat exist in small but variable proportion as a constituent of tubercle.

"4. The earthy salts are principally composed of the insoluble phosphate and carbonate of lime, with a small proportion of the soluble salts of soda. The statement of Boudet that cutaneous concretions are principally formed of the latter is directly opposed by other chemists, and is quite incompatible with their long persistence in the body.

"5. That very little difference in ultimate composition has yet been detected between recent tubercles and other so-called compounds of proteine."

Dr. Carswell‡ believes the chemical composition of tubercle to "vary at different periods in different animals and probably in different organs. In man it is chiefly composed of albumen with various proportions of gelatin and fibrin."

Broussais,§ in summing up the conclusions of pathological anatomists upon the nature of tubercle, says—"Les tubercules sont une matière opaque, d'un jaune pâle, qui, en l'état de crudité, a une consistance analogue à celle de *l'albumen* concrète, mais plus forte. Dans l'état de ramollissement, elle devient d'abord molle, friable, et acquiert par degrés une consistance et un aspect analogue à ceux du pus. On a désigné cette matière morbifique sous le nom de *matière scrofuleuse*, mais les tumeurs scrofuleuses, quoique *de même nature*, ont quelques caractères particuliers,‖ qui en font une veritable varieté des tubercules."

Recently considerable attention has been paid to the microscopic characters of tubercle. Breschet, who adopts the opinion of M. Kuhn in relation to the parasitical origin of tubercles, gave us several years ago the following microscopical appearances. "When you extract,"¶ says he, "with precaution, one of those small granulations of a gray colour which abound in the

* Am. Journ. Med. Sci., N. S., No. 24, p. 469.

† Ibid., p. 485, 486.

‡ Med. Chir. Rev. xxii., 369.

§ Examen des Doctrines, vol. iv., 118.

‖ We are not aware in what this difference consists. According to the analyses of scrofulous matter by Prout, Gendrin and Bredon, as given us by Mr. Phillips in his late work on scrolula, and as quoted above, it is made up for the most part of albumen, like tubercle.

¶ Am. Journ. Med. Sci., No. 28, p. 487.

lungs of certain individuals, and are the origin of tubercles, and place it under the focus of the microscope, having lacerated it, you see that it is composed of other granulations still smaller; and the lacerated substance seems to be composed of an innumerable number of small albuminous globules, connected to one another by hyaline filaments, and the whole enveloped by a layer of mucus. Granulations, therefore, appear to be constituted by a filamentous apparatus, surrounded by globules in great number. The analogy is clear and striking between this structure and that of the mould which forms on paste, bread," &c.

The following* are some of the most important conclusions of an elaborate Memoir communicated to the Academy of Sciences on the microscopic anatomy of tubercles, by Dr. Lebert.

1. "The constant microscopic elements of tubercles are these:—a. Molecular granules. b. A hyaline interglobular substance. c. The proper corpuscles or globules of tuberculous matter. These globules contain a number of molecular granules, but no distinct nuclei. They are not affected by water, ether and the feeble acids; but they are dissolved by the strong acids as well as by ammonia and caustic potash.

2. "The opinion of certain pathologists that tuberculous deposit and its globules are only modifications of purulent matter, is contradicted by the result of microscopic inspection; the differences between them are strong and decided. The corpuscles of the latter are considerably larger, of a regular spherical shape, and contain from one to three nuclei; they are, moreover, usually free and isolated; whereas those of tuberculous matter are, especially in the crude state of tubercles, closely joined together. The globules of cancerous matter are twice or even four times as large, and they contain a nucleus in which again from one to three nucleoli are often observable.

3. "In sarcocele and also in scirrhous and encephaloid tumour of the mamma we not unfrequently find a yellowish cheesy-looking substance which much resembles genuine tuberculous matter: but a careful examination with the microscope clearly shows that it consists entirely of globules of cancer infiltrated with fat.

4. "When tubercles soften, their interglobular substance liquefies, the globules separate from each other, and may then, by absorbing a certain portion of the fluid, become larger; this change does not constitute an increased growth, but, on the contrary, the commencement of the process of decomposition.

5. "The pus, which is found blended with the softened tubercles, is supplied by the surrounding tissues, and is by no means the result of any transformation of the matter itself; but the pus, it must be confessed, quickly alters it and renders its elements much less easily recognizable.

6. "The globules of softened tubercles become ultimately dissolved in a granular fluid, and thus the ramollissement of their substance passes fairly to the state of diffluence.

7. "The cretaceous condition of tuberculous matter presents under the microscope the appearance of amorphous mineral granules, blended often with crystals of cholesterine and colouring matter. A part of the tuberculous globules is then removed by absorption, while the other portion remains for a long time in an unchanged condition.

8. "Occasionally we find in tuberculous deposit corpuscles of fat, melanosis, greenish-coloured globules and crystals which have the form of those

* Am. Journ. Med. Sci., Oct. 1844, p. 461.

of the ammoniaco-magnesian phosphate. Besides these admixtures we may find blended along with them the elements of inflammatory and suppurative action and various sorts of epithelial exudations; all of which tend to modify the essential microscopic features of the tubercles."

In a more recent work, (*Physiologie Pathologique*), M. Lebert gives the following as the constant elements of tubercle:—

1. "A great quantity of molecular granules perfectly round, having a diameter varying from $\frac{1}{1000}$ to $\frac{1}{800}$ of a line; 2, a hyaline substance rather consistent, and uniting together the preceding; 3, globules proper to tubercle. The latter constitute the peculiar characteristic of this morbid product, and are thus described: their form is rarely altogether round, although it is probable that, on their first deposition, they approach the spherical figure, and that they assume a less regular and often angular contour, as we see in so many other analogous instances, from their close juxta-position; they are of a clear yellow colour and contain granules, but no distinct nucleus. These tuberculous globules vary considerably in their size, but without any definite relation to the age of the subject or to the organs in which they exist. After contrasting the globules in question with those of pus, cancer and encephaloid, M. Lebert thus expresses himself: 'Tubercle, then, contains in its crude state an element which is peculiar to it, and which *distinguishes it from all other morbid productions.*' "*

In regard to the origin or mode of production of tubercle three opinions, at least, have been entertained; the partisans of which have, in some instances, but too clearly shown the force of those prejudices which have been happily termed, by the author of the Inductive System, the "*Idola Tribus.*" By some they have been supposed to have a parasitical origin, and to be nothing more nor less than true hydatids or acephalocysts, and *tuberculization* the result of the death or destruction of these animals. By others they are said to be the product of a kind of irritation or subacute inflammation of the tissues in which they are found. While, by a third party, they are believed to be formed in the blood by an error in the nutritive functions, and to be afterwards secreted into the different tissues and organs of the body. Let us examine these separate opinions.

M. Kuhn,† we believe, was the first to advocate the doctrine of their parasitical origin, in a paper read before the French Academy, in the year 1833. In this paper, he advances the opinion, that "they are to be considered as truly of an animal nature." The hydatids, by their irritation, cause cysts to be formed around them; these cysts become stronger, fibrous, or even cartilaginous; meanwhile the acephalocysts enlarge by serous imbibition, and multiply by buds from their inner surface; these again, in course of time, give rise to others, the whole nest being contained in one bag. From the inside of this bag is secreted a yellowish viscid matter which becomes thicker and thicker; M. Kuhn regards it as the primitive tuberculous deposit; it gradually solidifies, and with a simultaneous shrinking of the cyst, tends to squeeze and kill the enclosed animals, thus giving rise to a nucleus of tubercles."

In 1834, M. Breschet‡ read a paper before the Academy of Medicine, on "A New Theory of the Formation of Tubercles," in which he also advo-

* Med. Chir. Rev., Jan. 1846, p. 243.

† Med. Chir. Rev., July, 1833, p. 201. It is true that the term tubercle had been before applied to hydatidic tumours, but all tuberculous tumours were not considered hydatidic.

‡ Am. Journ. Med. Sci., Aug. 1834, p. 478.

cated their parasitical origin in accordance with the views of M. Kuhn. In the year 1836, Mr. Carmichael* read an "Essay on the Origin and Nature of Tuberculous and Cancerous Diseases," before the Medical Section of the British Association, in which he adopts the same view, and asserts that "tubercles are beings possessing a vitality independent of the animal in which they are lodged, except so far as that animal affords them; 1st, the organic particles of which they are formed; and 2d, the nutriment which they imbibe by their own innate powers, and thus they form the last link in the chain of the last class of animals, the *Entozoa.*"

That hydatids are formed at times in the lungs, and other organs of the body, is a fact that cannot be denied, and it is highly probable, and indeed no less true, that they are formed under a similar predisposition, and identical *exciting causes;* but that they are the sole origin of tubercles, or that they are identical with tuberculous matter, we must either deny altogether, or dispute the statements of those whom we feel bound to consider as *good observers.* M. Louis† has detected hydatids in the brain of phthisical patients, and he has also met with one case of the kind in which they were found in the spinal marrow, and another in which they were found in the lungs; but although he regarded them as being intimately connected with tubercles, they could not be confounded with them. Andral has also met with hydatids in the human body, but not more than four or five times in 6000 cases.

The next opinion in relation to the origin of tubercle, is that which refers it to the action of inflammation or irritation, which, according to the physiological doctrine, is the first degree or stage of inflammation. Broussais, it is well known, has contended most strenuously for this doctrine. The fourth volume of his "*Examen des Doctrines Médicales,*" is almost entirely devoted to this subject, and affords us a fine specimen of his great ability as a writer. His argument seems to be principally founded on the two following facts: viz., first, that he had never seen, out of a great many subjects, in the French army, any one with tubercles in the lungs, who did not trace the disease to an "*impression of cold producing catarrhs, pneumonia* or *pleurisy,* or *some other cause which had irritated the lungs,* as concussion from falls, moral affections, the use of alcoholic drinks, and other excitants of the gastric passages, forced marches or other excesses which had accumulated the blood in the tissue of the lungs;" and secondly, that he had found that although "spare and feeble persons with long necks, contracted narrow chests, small limbs, fine and transparent skin, light hair, &c., become much more readily tuberculous and phthisical than men of dark skin, expansive chests, and well developed muscles, yet all men may become victims of tubercular phthisis," if exposed to the proper exciting causes.

This opinion of course has had a great many advocates, and has recently been adopted by Bennett, Evans, and Sibson, and is the only one which can satisfy the minds of the solidists or vitalists in medicine, but it appears to me that it can be successfully opposed not only by *à priori* considera-

* Am. Journ. Med. Sci., Feb. 1837, p. 532. The same doctrine is also adopted by Dr. Baron, in his work on "*Tuberculous Affections,*" and by Dupuy in his "*Traité de l'Affection Tuberculeuse.*" Vide Louis on Phthisis, Boston, 1836, p. 144.

† (Louis on Phthisis, p. 143.) We have never seen a case of hydatids in man. In hogs, however, they are very common, and are known as *measles.* They are not properly acephalocysts as the hydatids in man are said to be, for they possess a head as well as a body, and are called by Cuvier "Cysticercus Cellulosus." It is observed, that hogs that are allowed to go at large never have them.

tions, but by facts which cannot bear such a mode of interpretation. Although we are not entirely satisfied with the entire train of reasoning in the following extract, we beg leave to give it as containing a pretty complete refutation of the inflammatory origin of tubercle. "The doctrine of the inflammatory origin of tubercle has always appeared to us untenable; for setting aside the objections arising out of the relative topographical statistics of this product, and those of inflammation as established by Louis, there are others to be adduced which it is equally difficult to reconcile with the doctrine. Tubercle undoubtedly exists as such in the blood; it must, therefore, either co-exist with the fibrine or be supplementary of it. The latter supposition is entirely negatived by the researches of Andral and Gavarret, which demonstrate that the blood of phthisical patients contains more than that in any other disease, the pure phlegmasiæ excepted. We must, therefore, admit their co-existence in the blood. This being granted, the question of the origin of tubercle, so far as inflammation is concerned, is reduced within very narrow limits. Either the same vital action, that is, inflammation existing in capillary vessels which are separated from each other by inappreciable distances, is capable of giving rise at the same time to two totally different products, namely, tubercle and fibrine, or we must conclude that these products originate in a different vascular action. In other words, we must believe, if we hold the inflammatory theory, that the tubercular deposition, and the chronic induration in its immediate vicinity, the latter a pure fibrinous exudation, are the result of the same action in contiguous capillary branches. Now although we do not maintain that it is impossible, we must yet hold that it is improbable that where the blood, holding both the fibrine and tubercular matter in solution, arrives at the side of two given capillaries—one supplying one cell—the other the next—these vessels should be capable of exercising a kind of elective affinity; and one under inflammation allow the exudation of tubercle—the other of the true blood plasma. The difficulty is only to be avoided upon the supposition, that, of these two processes, namely, tuberculization and pneumonic exudation, going on as they assuredly do at the same time, the latter alone is inflammatory, the other is the product of some other kind of vascular action, most probably that which in healthy subjects is subservient to normal nutrition."*

But facts are also at variance with this opinion. "Microscopic examination most decidedly exposes the fallacy of the opinion that the gray granulation is the product or effect of inflammatory action." M. Raineyt has observed that the "comparatively healthy appearance of the capillaries surrounding a mass of tubercle, in reference to the tortuous and unequally dilated state of vessels going to parts in which fibrine is deposited as the result of inflammation, is subversive of the doctrine which attributes the deposit of tubercle to that process." But again, I myself have opened and examined the body of an infant a few weeks old, whose mother had just died from pulmonary consumption, in whom I found the lungs and spleen studded with granulations which seemed to have been inherited from its parent without previous disease—and Dr. Armstrong‡ says, "on examining the bodies of young children, I have sometimes found tubercles or the germs of tubercles in the lungs, where no sign of pectoral disease had previously existed; and I have met with them likewise in adult lungs where there had been no sufficient grounds for suspecting them during life.

* Ranking's Abstract, vol. i. p. 210.

† Am. Journ. Med. Sci., Oct. 1846, p. 469.

‡ Medical Works, p. 439.

Such occurrences have led me to suppose, that tubercles may sometimes be congenital, and that at other times they are the slow and unsuspected products of later periods."

Facts like these have necessarily led to the adoption of the opinion that tubercles are formed in the blood by a defective action of the organs of nutrition, or mal-assimilation, and that they are secreted into the tissues in which they may be found without previous inflammation. This seems to be the view taken of the matter by Bayle,* Laennec,† Louis,‡ Morton,§ Lebert,‖ and Nicolucci, and many others, and has been confirmed by the anatomical researches of Dr. Carswell. "While the miliary tubercles are considered by M. Andral as the pulmonary vesicles rendered hard by chronic inflammation, others following Dr. Carswell continue to attribute them to a secretion from the blood,¶ not of tubercular matter alone, but also of a portion of its albuminous fluid forming a transparent matrix or cyst for the more solid deposit. Dr. Watts seems to hold the modified view of tubercles being of an intermediate nature between pus and coagulable lymph, first solidifying, then softening. That tubercles are the pure result of inflammation is now rarely entertained; but the more modern phraseology is, that they are a perversion of the ordinary process of nutrition, and that the existence of the *scrofulous diathesis*, occasions that to be deposited as inorganizable albumen, which, in the sound state, would have taken on the form of organized fibrine."**

Dr. Wright†† thus expresses himself in relation to the formation of tubercle. "Tubercular matter," says he, "may be found either in the blood-vessels, or externally to them. But, wherever tubercle is produced, the blood itself is essentially the source of it. In those cases, numerous enough, in which tubercle is discharged abundantly, and in a state of complete maturation from the mucous membrane of trachea or bronchi or bowels, without any lesion of these parts, such matter must have been formed, and matured in the circulating system, whence it was eliminated as a foreign body by the most eligible outlet."

The following remarks of Dr. Carpenter‡‡ upon this subject, are so just that, although the extract is long, I beg leave to give them *entire*, as embodying our own views:—"In persons of that peculiar constitution which is termed scrofulous or strumous, we find an imperfectly organizable or cacoplastic deposit, or even an altogether aplastic product, known by the designation of tubercular matter, frequently taking the place of the normal elements of tissue, both in the ordinary process of nutrition, and still more when inflammation is set up. From an examination of the blood of tuberculous subjects, it appears that the fibrinous element is not deficient in amount, but that it is not duly elaborated; so that the coagulum is loose and the red corpuscles are found to bear an abnormally low proportion to it. We can understand, therefore, that such a constant deficiency in the plasticity, must affect the ordinary nutritive process; and, there will be a liability to the deposit of cacoplastic products without inflammation, instead

* Examen des Doct. Med., tome quatrième, pp. 152, 212.
† Treatise on Diseases of the Chest. ‡ Researches on Phthisis.
§ Illustrations of Pulmonary Consumption. ‖ Ranking's Abstract.
¶ Magendie once detected tuberculous matter between the columnæ carneæ of the right ventricle of the heart of an individual, who had died of consumption.—Legons sur le Sang, pp. 11, 12.
** Am. Journ. Med. Sci., April, 1844, p. 447.
†† Ibid., 1846, p. 451.
‡‡ Principles of Human Physiology, pp. 462, 463.

of the normal elements of tissue. Such appears to be the history of the formation of tubercles in the lungs, and other organs when it occurs as a kind of metamorphosis of the ordinary nutritive process; and in this manner it may proceed insidiously for a long period, so that a large part of the tissue of the lungs shall be replaced by an amorphous deposit, without any other ostensible sign than an increasing difficulty in respiration. It is in the different forms of tubercular deposit, that we see the gradation most strikingly displayed between the plastic and aplastic formations. In the semi-transparent, miliary, gray and tough yellow forms of tubercle, we find traces of organization in the form of cells and fibres more or less obvious; these being sometimes almost as perfectly formed as those of plastic lymph, at least on the superficial part of the deposit, which is in immediate relation with the living structures around, and sometimes so degenerated as scarcely to be distinguishable. In no instances do such deposits ever undergo further organization, and, therefore, they must be regarded as cacoplastic. But in the opaque, crude, and yellow tubercle, we do not find even these traces of definite structure; for the matter of which it consists, is altogether granular, more resembling that which we find in an albuminous coagulum. The larger the proportion of this kind of matter in a tuberculous deposit, the more is it prone to soften whilst the semi-organized tubercle has more tendency to contraction. This is entirely aplastic. Now, although tubercular matter may be slowly and insidiously deposited by a kind of degradation of the ordinary nutritive process, yet it cannot be doubted that inflammation has a great tendency to favour it; so that a larger quantity may be produced in the lungs after a pneumonia has existed for a day or two, than it would have required years to generate in the previous mode. But the character of the deposit still remains the same; and its relations to the plastic elements of the blood, are shown by the interesting fact, of no unfrequent occurrence, that in a pneumonia affecting a tuberculous subject, plastic lymph is thrown out in one part whilst tuberculous matter is deposited in another. Now inflammation, producing a rapid deposition of tubercular matter, is peculiarly liable to arise in organs which have been previously affected with chronic tubercular deposits by an impairment of the process of textural nutrition; for these deposits acting like foreign bodies, may of themselves become sources of irritation; and the perversion of the structure and functions of the part renders it peculiarly susceptible of the influence of external morbific causes. These views, at which several recent physiologists and pathologists have arrived on independent grounds, seem to reconcile or supercede all the discordant opinions which have been upheld at different times regarding the nature of tubercle; and lead to the soundest views with respect to the treatment of the diathesis."

Having now explained as far as we have been able, the nature and origin of tubercle or strumous matter, which we believe identical, we lay down the following proposition; that, namely, in whatever part of the system this matter may be found deposited, however variant may be the symptoms produced from the functions disturbed, the diseases by which this deposit was effected, are invariably the same, or, in other words, are isopathic in their nature. This proposition is fully established if the law, which we have already laid down, be admitted to be true, namely, that "diseases which result in products, or deposits which are both isomorphic and isomeric, must be considered as isopathic, no matter how they may differ in their seats and symptoms." The same law has been expressed

in different language by M. Lebert.* "In the molecular composition of morbid products," says he, "everything which is really and materially different in pathology, shows this difference in the ultimate elements appreciable by sight, that is, in the microscopic structure." Now, if the chemical and microscopic elements of tubercle are found to be the same in whatsoever part of the body it may be deposited, why should the diseases which produced it be considered different? But we are very glad to have the following high authorities in favour of our proposition. Dr. Gerhard† has declared that "all the forms of disease characterized under the term tuberculous, resemble each other in their anatomical lesions, which consist in a deposit of tuberculous matter. The variety in the symptoms of tuberculous diseases arises partly from the difference in the *structure of the organs* affected, and partly from the degree of inflammation which may accompany their formation. The functions of an organ are usually disordered where it becomes the seat of tubercle; and hence every local disease which is accompanied by a secretion of this substance, offers the compound symptoms of the general tuberculous disorder, and of the local lesion. Where the local symptoms predominate, the general character of the tuberculous disease is lost sight of, and the affection is regarded as an ordinary inflammation. Thus most cases of tuberculous peritonitis and meningitis are even now considered as simple inflammatory affections. In the lungs, the local signs are much less intense, so that time is allowed for the development of the symptoms of the general disease, and pulmonary phthisis is looked upon in the light of a mere chronic phlegmasia. It is this moderate development of the local signs, which has caused the true nature of pulmonary consumption to be much better understood than that of many analogous diseases." "We must, therefore, remember that as phthisis constitutes only *one* of the numerous forms of tuberculous diseases, we should be careful to avoid isolating it from the *numerous kindred affections* occurring in the lymphatic glands, the serous or mucous membranes." And even still more in point are the following remarks of Rilliet and Barthez,‡ in their work on the Diseases of Children. "Tuberculization," say they, "is the deposition in organs of an accidental production, without analogy in the economy, to which the name of tubercle has been given. It is common to meet with this foreign body simultaneously in several organs, and whichever be that in which it is deposited, its nature, its evolution, and the greatest part of the phenomena it gives rise to, *are the same.* The different species of tuberculization, then, should, just as dropsies or phlegmasiæ, be considered *as identical affections*, whose differences principally result from the seat and functions of the organs they have invaded. Tubercle exerts on every tissue the same local action; thus, very frequently, occasioning the development of a secondary inflammation of which the frequency and characters vary according to the nature of the organ affected. The tubercular phlegmasiæ form a group just as well marked as do the simple phlegmasiæ. The general pathological effects which tubercle causes, being only influenced in an indirect manner by the organs affected, present an *almost perfect identity* in all the species (varieties) of tuberculization. The most common of these effects is a general wasting, a consumption, to which the name of phthisis has been given."

* Med. Chir. Rev., Jan. 1846, p. 242.
† Am. Journ. Med. Sci., Feb. 1838, pp. 368, 369.
‡ Vide Review of the Work, in Med. Chir. Rev., Oct. 1845, p. 406, *et seq.*

We now proceed to take up in order, those diseases belonging to this type or species which are isopathic the one with the other. The prototype of these diseases must, of course, be the struma vulgaris or common scrofula, of which we have already given a definition. It is a disease, which was well known to the ancients, being denominated χοιρας, by the Greeks, and struma by the Latin authors; and the faithfulness of the following description by Celsus,* will be recognized by all:—"Struma quoque est tumor in quo subter concreta quædam, ex pure et sanguine glandulæ oriuntur; quæ vel præcipue fatigare medicos solent; quoniam et febres movent nec unquam facile maturescunt; et sive ferro sive medicamentis curantur plerumque iterum juxta cicatrices ipsas resurgunt; multo post medicamenta sæpius; quibus id quoque accedit quod longo spatio detinent. Nascuntur maxime in cervice; sed etiam in alis et inquinibus, et in lateribus—in mammis quoque feminarum se reperisse, Meges auctor est." We need give no further description of it—and the first disease which we shall mention as isopathic with it, is hydrocephalus, or probably more correctly "tubercular meningitis."

This disease, like many others, had long been ascribed to the vague and uncertain pathogeny of inflammation of the brain or its meninges, either acute or chronic.

In the February and May numbers of the *American Journal of Medical Sciences*, for the year 1834, and the November number for 1835, Dr. Gerhard has detailed a number of cases of cerebral diseases, and his analysis has led him to "suspect a fact which will be presently," says he, "more fully developed, that is, the close connection, if not *identity* of one form of cerebral disease with the tuberculous affections;" and again, he says, "the most important fact to which this series of observations has led, is the proof of the connection of the cases included in the first class with the tuberculous affections. It was long since remarked that many children who had died of a cerebral disease, were of a scrofulous temperament, but it was impossible either to confirm this remark, or to point out the cases to which it should be limited, without the aid of pathological anatomy." Subsequent reflection seems to have changed the suspicion into a certainty in his mind, for in the February number of the same Journal, for the year 1838, he holds this strong and decided language:† "If there be any disease which, from its frequent occurrence and fatal termination, causes the despair both of physician and patient, that disease is the tuberculous affection. *Whether we designate it as pulmonary phthisis, meningitis of children, chronic peritonitis or scrofula, the radical disorder is the same, and presents similar anatomical characters.*"

Dr. Hennis Green,‡ who was among the first writers to call the attention of medical men to the frequency of coincidence of the disease with the deposition of tubercular matter upon the meninges of the brain, in a paper on this subject, published in the *Medico-Chirurgical Transactions* (1842), has given a table containing the name, age, sex, symptoms and lesions, of 30 children, who died from or with tubercles of the brain. Nine of the children died with symptoms closely resembling those of acute hydrocephalus; a few with symptoms of softening of the brain, the rest of consumption, small-pox, &c. In enumerating the symptoms attendant on

* Medicina, p. 262.

† Am. Journ. Med. Sci., Feb. 1838, p. 368.

‡ Med. Chir. Transactions, vol. xxv., and Amer. Journ. Med. Sci., April, 1843, pp. 461–4.

the deposition of tubercle in the brain, he observes, "In most cases it (that is, the acute stage) consists in a succession of symptoms of an irregular character, and more or less allied to those of acute hydrocephalus, or softening of the brain. Thus the acute stage of cerebral tubercle may commence as the third stage of acute hydrocephalus, or the symptoms of the different periods of this latter disease may run rapidly into, and be mixed up with each other;" and again, "the irregularity of the symptoms which occur in the acute stage of cerebral tubercle, is, I conceive, a very important point in the history of cerebral disease among children. Authors frequently mention the occurrence of anomalous cases of hydrocephalus, of cases in which the first stage of the disease was wanting. Is it not probable, from what has been said, that many of these hitherto unexplained anomalies depend on the complication of acute hydrocephalus with cerebral tubercle, or, to speak more correctly, on the fact that the acute stage of cerebral tubercle generally consists in irregular hydrocephalic symptoms?"

Dr. Green observed, in the Children's Hospital at Paris, 60 cases of hydrocephalus, in 56 of which tuberculous matter was deposited in the inflamed pia mater. MM. Rilliet and Barthez found the same in 29 out of 33 cases, and M. Bouchut in 6 out of 9 cases. "The intimate connection of the disease," says the *Med. Chir. Rev.*, "with the strumous diathesis has been long observed. The observations of English, German, and French writers, but especially the latter, all tend to show the rarity of the occurrence of hydrocephalus, without tuberculization of some one or more organs of the economy. In the vast majority of cases, it is the strumous, and far less manageable form of inflammatory action which prevails."

Dr. Good* has said of the disease that "it is often connected with a scrofulous habit, and has sometimes formed a fatal metastasis to consumption." Dr. Green† says, "in children the tubercular matter is widely diffused, and has implicated many important viscera; in the brain it may excite hydrocephalus or meningitis; under the serous membrane of the chest, pleurisy; in the abdomen, peritonitis; in the intestines, tubercular ulceration. These complications rapidly undermine the resisting power of the little patient; diarrhœa sets in and death ensues long before the period at which a fatal termination takes place in the adult." Dr. Evans‡ says: "The study of this species of meningitis is the more worthy of engaging the attention of the pathologist, from the fact that this affection, like chronic peritonitis, often attacks subjects in whom the tubercular affection of the lungs has not yet made great advance—in other words, subjects who may have survived a long time had not the meningitis become implicated in the disease." Dr. Hamernjk, in a late paper on Tubercular Meningitis, of which an abstract is given in the January number of the *Am. Journ. Med. Sci.*, makes the following remarks touching the connection of scrofula and this form of meningitis:—"When a child," says he, "which has for some time appeared to lose flesh, and especially if he have previously had *scrofulous enlargement of the glands*, becomes the subject of pains in the head, we must be on our guard; but other symptoms portend the appearance of tubercular meningitis; in the case of robust children headache is not of so serious import, as it may arise in them from many other causes. Convulsions, tossing of the hand about the head, and screaming are not specially connected with the tubercular affection, as any kind of exudation at the base of the brain may give rise to the same symp-

* Study of Medicine, vol. ii. p. 402. † Med. Chir. Trans., vol. xxvii. p. 358.
‡ Med. Chir. Rev., April, 1845, p. 404.

toms; but it is to be remembered that in nineteen out of twenty cases *deposition in this spot is of a tuberculous nature.*" Dr. Bennett,* in his work on Acute Hydrocephalus, has especially directed attention to *scrofula* as a predisposing cause of the disease, and among the morbid appearances presented after death, he mentions a "yellowish gelatinous substance frequently containing caseous deposit, and intermediate in texture between fibrine and tuberculous matter." "In other cases *decided* tuberculous matter is deposited in layers or patches varying in size and consistence; or, again, as solid masses imbedded in the substance of the brain. Again, granules or miliary tubercles may be observed singly or in groups, situated on the pia mater." We need pursue this topic no further, as we feel convinced that it is now very generally admitted that there is a form of hydrocephalus† isopathic with scrofula.

We pass on to the consideration of another and probably the most frequent modification of scrofula. We allude to that form of pulmonary consumption now very commonly known as tubercular phthisis. Bayle, it is well known, divided phthisis into six different species, *a tuberculous, a granulated, a cancerous, a melanotic, a calculous,* and *an ulcerous,* while, on the other hand, Laennec and Louis have admitted but one species, the *tuberculous.* Now it is true that the application of terms is in a good degree arbitrary, and their use, either in a contracted or expanded sense, cannot be productive of confusion so long as the writers make themselves clearly understood; yet we think there has been fault on both sides in the above use of the word phthisis. Bayle has made too many, and Laennec too few, species of the disease. Bayle was evidently deceived in considering granulations as different from tubercles, and hence his first two species become merged into one; so also, melanosis being in the view of Laennec a soft cancer, his *cancerous, melanotic* and *ulcerous* would become *one* and *the same,* and he would then have but three species. He has, however, omitted a most important species of phthisis to which we alluded under our head of purulent types, namely, the *apostematous.* Neither Bayle nor Laennec makes any mention of this last, and yet it seems to us to be as clearly marked a species of disease as was ever presented to the consideration of the mind. Laennec and Louis are also wrong in confining the appellation to the *tuberculous* alone, inasmuch as the same general symptoms may arise from a disease affecting the same organs, yet having very different anatomical characters.

As already stated in our last paper, we think the term has been applied to at least three distinct species of disease—these are, the *apostematous,* the *tubercular,* and the *cancerous* or *carcinomatous,* and we will add a fourth,‡

* Med. Chir. Rev., April, 1843, p. 332.

† This disease may exist, to all intents and purposes, *without the effusion of water;* the patient dying before that event takes place. The effusion of water, constituting the various forms of dropsy, is a secondary and not a primary element of the disease, or, as Heberden has expressed it, "Hydrops non tam ipse morbus est quam alicujus morbi signum," and seems to depend upon three different proximate causes, viz.: 1st, mechanical obstruction by pressure upon the vessels. 2d. That peculiar state of the blood known as *aquosity,* where the watery parts are positively increased, forming idiopathic dropsy, belonging to our head of hydropic types, and 3d, the passage out of the blood of an undue portion of *its albumen. There may be a chronic* form of this disease arising entirely from *hydatids.*

‡ I am under the impression that there is another form of consumption or phthisis which is specifically distinct from either of the above, and properly belongs to our species of marsh or intermittent fever. This form is known among writers as catarrhal phthisis or chronic bronchitis, and its true pathology seems to me to consist in

the *calculous* of M. Bayle, which we will again notice under the head of gouty or podagric types. We intend to treat in this place of the disease described by Louis and Laennec, namely, the *tubercular*,* and of *that alone.* This is the form of pulmonary consumption which we regard as being entirely isopathic with the scrofulous affection or common scrofula. Broussais† was well convinced that Laennec and Louis were wrong in attributing phthisis in all cases to tuberculosis of the lungs, and assures us that he has seen many cases of the disease in which no tubercles could be detected after death. This was, no doubt, true, and we have before mentioned the observation of De Haen, that he had examined cases after death from phthisis, in which he could not detect the point in the lungs whence proceeded the purulent discharge; but all this apparent confusion vanishes when we remember that both these observers were speaking of a disease specifically distinct from the one we are now considering. They were speaking of the apostematous or purulent consumption, while Laennec and Louis were confining themselves to the tubercular. Here, then, is one example of the confusion among medical writers arising from their not recognizing the law of the isopathism or parallelism of diseases: from not considering a fact long ago taught by Sydenham,‡ that "diseases may come under the same genus, bear the *same name*, and have some symptoms in common, which, notwithstanding being of a different nature, require a different treatment."

Having now clearly defined the disease of which we are speaking, I proceed to the *proof of its identity with* scrofula. This identity, I know, has been denied by some able writers, and very recently by such men as Evans,§ Beer, Lebert, Phillips,‖ Albers, Mackenzie,¶ and our own distinguished countryman, Dr. Chapman;** but I cannot help believing that

a transfer of the perspiratory or urinary excretions, from want of action in these emunctories, to the mucous membrane of the lungs, forming a false crisis, and should come under our notice of the critical symptoms of that fever. This was evidently the opinion of Dr. M'Culloch, and it can readily be perceived how this continued overtasking of the lungs with the elimination of the watery particles of the blood, may produce an irritation that would lead to emaciation, cough, and the expectoration of *muco-purulent* or *puriform* matter. If this opinion be well founded, then it would follow that one form of phthisis would prevail in malarious regions, which, instead of being antagonistic, would be isopathic with the fevers of such districts, whereas it might be still true, that the tubercular form would be more confined to higher and colder latitudes, and might not be the most usual form met with in those places where intermittents prevail. In the discussions, therefore, upon the antagonism of marsh fever and phthisis, care should always be had to *ascertain the peculiar species of both diseases.*

* The existence of tubercles in the lungs is the cause and constitutes the special character of phthisis.

† M. Broussais, after quoting the remark of M. Louis, borrowed from Laennec, that "l'existence des tubercules dans les poumons est le cause et constitue le caractère propre de la phthisie," has the following declaration:—"Nous declarons d'abord cette proposition fausse, en affirmant que nous avons rencontré plusieurs fois et notamment dans cet hiver de 1832, des examples de consomption par phlegmasie chronique et fonte purulente des poumons, dans lesquelles il n'y avait pas le plus légère trace des tubercules, en prenant ce mot dans le sens rigoureux que lui donne M. Louis. Voilà donc une première loi qui se trouve fausse. Comme nous avons vu cela, nous sommes certain que d'autres le verifieront, et nous voilà tranquille."—Examen des Doct. Med., tom. quat. p. 336.

‡ Preface to Wallis' edition of the "Works of Thos. Sydenham," p. 25.—(Anno. 1788. London.)

§ Lectures on Pulmonary Phthisis.

‖ Scrofula, its nature, causes, &c.

¶ Ranking's Abstract, i. p. 73.

** Lectures on the more important Diseases of the Thoracic and Abdominal Viscera.

we have, on the other side of the question, the weight of authority and of facts. In the first place the isomorphic and isomeric characters of tuberculous and scrofulous matter prove their identity. We have already seen that Prout, Gendrin and Bredon have given the chief ingredient in scrofulous matter as albumen; this is the chief ingredient in tubercle. Mr. Gulliver* says, that "crude tubercular matter, from *whatever organ obtained*, differs as little in its microscopical as in its general and chemical characters. The drawing shows how nearly the microscopical elements composing crude tubercles of the *lungs* and of the *lymphatic glands* agree." Dr. Good† says, "the untempered fluid contained in the tubercles resembles that of scrofula, and more especially as this variety of consumption is very generally found in constitutions distinctly scrofulous, the analogy between the two is extremely close, and has often led to a similar mode of treatment." Laennec‡ says, the "tubercles in the lungs differ *in no respect from those* situated in the glands; and which, under the name of scrofula, after being softened and evacuated, are followed by a perfect cure." Dr. Duncan§ regards tubercles "as lymphatic glands in a particularly diseased state; that such diseased state is the consequence of scrofula; and that *tubercular phthisis may, in every instance, be regarded* as *scrofula affecting the lungs.*" This is also the opinion of Dr. Parr, who ascribes consumption to an ulcer in the lungs, which, proceeded from the suppuration of a strumous gland, which we know," says he, "heals with peculiar difficulty." Bayle‖ insisted on the scrofulous origin of tubercles.—I have myself observed (and I would ask who has not?) scrofulous enlargement of the lymphatic glands to be suddenly replaced by fatal and rapid pulmonary phthisis—thus proving their mutual *convertibility.* This has been repeatedly noticed by Lugol, whose experience and observations upon this point are so full and conclusive, that we will sum up all we have to say in the following pertinent extract:—Lugol¶ says, "The identity of scrofula and pulmonary tubercles is, in our opinion, *most manifest;* they have both an hereditary origin, and are equally general and fatal in the affected family. The two latter characters, which belong to each of these diseases in an equal degree, are in themselves sufficient to establish their identity; but we shall endeavour to render the fact still more evident by demonstrating, first, that scrofula has frequently a tubercular origin; secondly, that the two diseases ordinarily co-exist in the same family; and thirdly, that all scrofulous subjects have tubercles in the lungs.

"1st. More than half the subjects of scrofula have consumptive progenitors. Scrofulous diseases of all kinds invade a family without the operation of any other cause than the existence of pulmonary tubercles in one of the parents. So general is this fact, that in a ward containing 84 beds, we have constantly ascertained the existence of consumption in one or other of the parents of more than half the patients; and even this is below the real proportion, for a great many patients are utterly ignorant of the sanatary condition of their families, and in other cases the presence of consumption has been overlooked, because it was not accompanied by its more manifest signs.

"2d. The preceding observations are still further justified by the frequent coincidence of scrofulous diseases and pulmonary consumption in

* Med. Chir. Rev., July, 1846, p. 131. † Study of Med., vol. iii. p. 273.
‡ De l'Auscultation Mediate. § Am. Journ. of Med. Sci., No. 32, p. 388.
‖ Examen des Doctrines Médicale, tome quat., p. 152.
¶ Ranking's Abstract, vol. i. p. 73.

the same family. (And here the author gives cases in confirmation.) In scrofulous families, children often perish from disease in the lungs; and again in consumptive families some of the members are carried off by various forms of scrofulous disease.

"3d. Scrofulous, in the ordinary sense of that word—that is, children who are regarded as scrofulous, and not tuberculous—are, nevertheless, as much the subjects of this deposit as those in whom tubercle has concentrated itself in the respiratory organs. *The natural death of the scrofulous is by consumption;* we might say, indeed, that they seldom die in any other way, for in all forms of scrofula, death rarely takes place until after the invasion of the lungs by tubercular deposit." To the same purport we might cite the opinions of others* upon the subject, but we deem it needless; enough has been said to prove the identity of the two diseases.

The next disease which we shall consider as isopathic with scrofula, is "*tabes mesenterica.*" Marasmus has long been regarded as a scrofulous affection, inasmuch as it generally occurs in the children of scrofulous parents, and although denied by some, there can be no doubt of the fact, that in this disease the deposit of scrofulous matter into the lymphatic glands under the skin, is replaced by a similar deposit into the mesenteric glands. Dr. Good† has given the disease the name of MARASMUS TABES STRUMOSA, indicating his belief in its scrofulous origin. Dr. Marshall Hall‡ has arranged it along with tubercular meningitis and pulmonary consumption, as alike the product of scrofula. Dr. Dickson§ remarks upon this point, "Gregory was the first, I think, to recognize the cause with distinctness. It would be well if we could agree with him to employ the phrase in a limited sense to designate this infantile complaint as consisting in a primary scrofulous affection of the peritoneum and mesentery, with consequent disorder of the alimentary canal in all its extent;" and again, "It shows itself in an infinite majority of cases in the children of scrofulous parents; or, where the parents have not exhibited any specific form of scrofulous disease, under circumstances in which they and their offspring are obviously exposed to the influence of the agents formerly spoken of as fostering the production and development of scrofula."

The reviewer‖ of Gibert's work on pulmonary consumption has made the following remarks upon this point, which we will give entire. He says: "These seeds (that is, of unorganizable matter) are generally known by the name of tubercular matter, and when deposited in the lungs in separate masses, they are termed tubercles, and the resulting disease is denominated consumption of the lungs. It may, however, be here observed, that where tubercular or unorganizable matter becomes deposited in any of the lymphatic glands or in the joints, the disease is termed scrofula. If, on the other hand, it is arrested in its passage through the mesenteric glands, then the name of tabes mesenterica is employed to distinguish it. It must, therefore, appear obvious that these three diseases *are all radically one and the same,* depending entirely on the presence of unorganizable matter, and *differing only in locality.*"

* Whilst these sheets are passing through the press, I have received a notice of a work "On the Pathology and Treatment of Scrofula," by Dr. Glover, from which it appears that the author is a believer in the identity of scrofula and tubercle, and I beg leave to refer my readers to this work for further confirmation of the views above set forth. See also notice of it in the preceding number of this Journal, pp. 167–177.

† Study of Med., iii. p. 234. ‡ Practice of Med., p. 172.

§ Essays on Pathology, i. 576.

‖ Med. Chir. Rev., July, 1842, pp. 46–47.

When the tuberculous matter is deposited on the peritoneum, the disease is known as tubercular peritonitis. M. Louis* considers every case of chronic peritonitis, when not dependent upon the acute, as being tuberculous. Drs. Henry Marsh† and Fleetwood Churchill have both published communications in the *Dublin Journal of Medical Science*, on a form of peritonitis occurring in strumous individuals, to which they have given the title of strumous peritonitis, and they say that "strumous inflammation of the peritoneum with effusion may present itself either as an acute or chronic disease: the latter, which is the more frequent form, may be an evident consequence of the former, or, it may occur without our being able to recognize any preceding acute stage, coming on so gradually in fact, that the nature of the complaint may not be discovered until it is fully developed." The appearances which they describe as being presented after death, are "more or less effusion into the peritoneal cavity, with shreds of floating lymph therein. The intestines are agglutinated together and sometimes to the peritoneum, which membrane is occasionally thickened and partially injected, and sometimes studded *with miliary tubercles*, or has tubercular matter deposited on it. The mesenteric glands may be healthy, or they may be enlarged and *contain tubercular matter.*"

The effusion alluded to above, would, of course, give rise to a form of ascites which, as in the case of tubercular meningitis, would not change the nature of the disease, as this would be but another link added to the results of *one* and *the same morbid action.* We pass on to the consideration of another isopathic form of this species of disease.

The form of disease to which we allude is an affection of the urinary organs, known as albuminuria, and by many supposed to depend upon a certain state of the kidneys, which has been called morbus Brightii. In this disease the urine is found to be coagulable by heat and nitric acid, showing the existence in it of a large quantity of *albumen.* Dr. Bright, to whom we are chiefly indebted for a knowledge of this disease, has described the appearances of the kidneys after death as of three different kinds. "In‡ the first, the kidney loses its usual firmness, and becomes of a yellow mottled appearance externally; the size is not materially altered. In the second, the whole cortical part is converted into a granulated texture, and there appears to be a copious morbid interstitial deposit of *an opaque white substance;* the kidney is rather larger than natural. In the third, the kidney is rough and scabrous externally, and rises in numerous projections not much exceeding a large pin's head, yellow, red and purplish; it is hard, and inclined to be lobulated, and its texture approaches to a semi-cartilaginous firmness; there appears, in short, a contraction of every part of the organ, with less interstitial deposit than in the last variety." Dr. Christison has styled "the disease '*granular degeneration of the kidneys*,' M. Rayer '*albuminous nephritis*,' while M. Solon terms the primary disease '*albuminuria.*'"

In the 29th volume of the *Medico-Chirurgical Transactions*, there are no less than three separate articles devoted to the consideration of this disease—one by Dr. Johnson, another by Mr. George Busk, and a third by Mr. Joseph Toynbee. Dr. Johnson advances the opinion that the disease depends essentially upon a fatty degeneration of the kidneys, similar to that which takes place in the liver, or to an "excessive increase of

* Hall's Practice, 573. Note by Eds.
† Am. Journ. Med. Sci., July, 1843, p. 206, *et seq.*
‡ Hall's Practice, p. 393. Med. Chir. Rev., April, 1842, p. 450.

fat, leading to engorgement of the epithelial cells and of the urinary tubes." Mr. Toynbee agrees with Dr. Johnson in part, and admits that the circulation in the kidney of "an unnaturally large quantity of carbonized and azotized elements," may produce a deposition in the organ of adipose matter, but says that there "can be no doubt that albuminous urine often exists without any such deposition;"—while Mr. Busk affirms that a microscopical examination of the substance of the kidney reveals the following appearances: "the tubuli uriniferi were found to be in parts indistinct or obliterated, and in others to be filled with a semi-opaque, white granular material, soluble or rendered transparent by acetic acid, and *presenting none of the characters of oil, very few globules of which were observed in any part of the gland.* It was the dense white material, consisting of minute sub-globular refracting particles, soluble in acetic acid, the accumulation of which in the larger straight tubuli uriniferi constituted the white striæ above mentioned." Dr. Robinson,* in his work on "*Granular Disease of the Kidney,*" mentions a sub-acute form, in which there exists "*more or less albuminous deposit*" into the substance of the kidneys. M. Rayer† has met with true tubercular disease of the kidneys in *albuminuria.*

This contrariety of opinion in regard to the nature of the deposit into the kidneys, which gives them the granular appearance, should cause us to hesitate in giving the opinion which we entertain upon the subject, particularly when we remember that this opinion is not founded, as it should be, on actual experiment and observation on our own part; but we, nevertheless, will express our convictions founded upon the observations of others, with the hope that they may be either fully disproved or established by subsequent observers. We regard the albumen, then, which is passed off in the urine, as nothing more nor less than *tubercular matter* or *vitiated albumen,* which, instead of being deposited in the glands or other tissues, finds an outlet from the system *in this way,* and that the *granular state* of the *kidneys* is a kind of *tuberculosis* of *these organs,* caused by the *deposition* of this *albumen in its passage through them.* This being thus a vicarious discharge of tuberculous matter, is a relief to organs that might otherwise have suffered. In this way, no doubt, many purulent diseases come to a crisis by the elimination of the deleterious matter through the alimentary canal, or some other emunctory, possibly the kidneys or the liver. The proof which we have of the identity of this disease with strumous or tubercular diseases, is founded chiefly on the following observations:—

"In persons of a scrofulous constitution, I have observed," says M. Rayer,‡ "the urine, which a short time before exhibited no abnormal phenomena, assume all the characters observed in cases of chronic albuminous nephritis with general dropsy." Among the causes enumerated by this writer, are mentioned "scrofulous disorders" and "*pulmonary phthisis.*" This last is said to have a "*marked effect.*" Syme§ has also met with albuminous urine in "*strumous disease.*" Scrofula and tubercular deposits are referred, by M. Fourcault,‖ to the same cause as albuminuria. But by far the most interesting article which I have seen upon the subject is from the pen of Dr. Thos. Bevil Peacock,¶ in the *Am. Journ. of Med. Sciences,*

* Med. Chir. Rev., April, 1842, p. 451.
‡ Ibid., Oct. 1841, p. 458, *et seq.*
‖ Am. Journ. Med. Sci., Jan. 1845, p. 194.
¶ Ibid., Oct., 1845, p. 450, *et seq.*
† Ibid., p. 452.
§ Ibid., April, 1842, p. 452.

for Oct. 1845. The title of this paper is, "On the co-existence of granular disease of the kidneys with pulmonary consumption; and on the influence of the strumous diathesis in predisposing to the renal disease." After stating the opinion of Dr. Bright that "the condition of the body in this form of renal disease is unfavourable to the existence of phthisis," he cites the adverse opinions of other men. Dr. Christison says, "I have very little hesitation in putting down the scrofulous diathesis among the predisposing causes of granular disorganization of the kidneys. In repeated instances I have been led, by the supervention of œdema during phthisis, to examine the qualities of the urine, and although the result has not been invariable, still in a great proportion of cases of the kind, the secretion has been found to possess the properties essential to the renal disease." M. Rayer "expresses the concurrence of his experience and views with those of Dr. Christison." Martin Solon "found the lungs tuberculous in four out of ten dissections of persons who had sunk under granular disease of the kidneys." Dr. Osborne states, that "of thirty-six cases of renal disease with albuminous urine, which had fallen under his notice, four originated in scrofula, and in one of the only two dissections of cases of renal affection producing dropsy, which he relates, the lungs were in an advanced state of tuberculous disease." Dr. Peacock then goes on to give the relative proportion which tuberculous affections of the lungs bear to granular disease of the kidneys, as deduced from the observations of Dr. Gregory, M. Rayer, and himself, and he finds, that by "placing together these observations, which do not differ more widely than will always be the case in limited series of facts, it results, that of 117 cases of decided granular disease of the kidneys, extensive tuberculous affections of the lungs existed in 26, and a smaller number of tubercles of recent origin in 10 others; or, out of the 117 cases, 36, or nearly one-third (30.7 per cent.), contained more or less extensive advanced tuberculous deposition in the lungs, a proportion much larger than that deduced by Dr. Bright from his table,"—and without going more into detail, we must refer our readers to this valuable paper, and give the result of Dr. Peacock's inquiries. "In conclusion," he says, "we have seen that pulmonary consumption very frequently co-exists with the granular disorganization of the kidneys, and that so far from being an accidental complication supervening during the last stages of that affection, *the pulmonary* usually *precedes the renal disease.* We have also found that in cases where the lungs are healthy, there frequently exist other proofs of the *tuberculous* diathesis, and we can therefore scarcely withhold the conclusion that this *constitution very powerfully predisposes to the renal disorganization.* The diseases dependent on the *scrofulous constitution* being most frequent during infancy and adolescence, it follows that at these periods the renal and strumous affections should most generally co-exist. This inference is *confirmed so far as relates to the coincidence of phthisis and renal disease by the analysis of the cases before referred to.*"

Now since it has been established, by the experiments and observations of Magendie and Andral, that the escape of the albumen from the liquor sanguinis does necessarily give rise to effusions of serum into the various cavities and tissues, *the effusion*, in the disease we are now considering, is, as has been said in relation to the effusion from tubercular meningitis and peritonitis, nothing but a complication of the original disease, and of course must be considered as isopathic with it, and as the serous parts of the blood may not be effused into the tissues, but pass out also by the kid-

neys we have a *form of diabetes** which is also entirely isopathic with the granular disorganization of the kidneys. We shall have occasion to speak of diabetes again under the head of hydropic types in which the disease may be idiopathic. That there is a form intimately connected with Bright's disease, and with the scrofulous affections generally, we have the testimony of several writers.

In the *Provincial Medical and Surgical Transactions* is a paper by Dr. Streeten† on the medical topography of Exeter, in which he uses the following language upon this point: "Cases both of diabetes mellitus and insipidus are by no means uncommon. Every case of true diabetes that has come under my observation here has terminated in tubercular consumption. This has been so uniformly the case that the conviction forces itself upon me that *it is essentially a symptom of scrofulous disease*, and that the kidney is made to be an emunctory of those matters otherwise colliquatively discharged by the skin." Dr. Bell,‡ in an *Essay on Diabetes*, in speaking of its complications, particularly dwells on phthisis pulmonalis, and the reviewer says, "a very common complication it is; granular disease of the kidney is not a very rare one, and dropsy, generally a consequence of the latter, closes the scene."

We must pass over hastily the remaining affections which we regard as isopathic with the present species, and content ourselves by a bare reference to them. Scrofula, it is well known, may affect the tegumentary tissues giving rise to a form of *ophthalmia* and otitis, and to many so called *skin*

* We hope to treat more fully of diabetes in another place in reference to its true pathology. We may be permitted to say here, however, that the change from the albuminous to diabetic or saccharine urine may easily be explained upon chemical principles by simply admitting a slight modification in the secretory or excretory action of the system. It is stated by Dr. Barlow (*Med. Chirurg. Rev.*, vol. xxxviii. p. 256), that 9 equivalents of sugar + 1·1 equivalent of ammonia—5 equivalents of water and ½ equivalent of carbonic acid, when reduced to 100 parts, give very nearly the equivalents in albumen, according to the analyses of Gay-Lussac and Thénard. If this be so, then it can readily be perceived how the one might be converted into the other—for although the experiments and observations of Liebig and Boussingault tend to establish the doctrine that there is no creation of these proximate principles by the action of digestion, but that each is found ready formed in the articles of diet which we consume, yet they do not appear to me (vide an interesting paper entitled "Récherches Expérimentales sur le développement de la graisse pendant l'alimentation des Animanæ, par M. Boussingault"—Annales de Chimie et de Physique, tome xiv, p. 419; also "Expériences sur l'engrais des oies, par M. Persez"—Ibid., p. 408), to falsify the notion that in the processes of transformation which take place in the system, one of these principles may be converted into another, when the same ultimate elements exist in both. Thus fat might be made in some cases to replace the sugar, both being composed of the same elements, although in different proportions, and would thus account for those appearances in the kidneys mentioned by Dr. Johnson and Mr. Toynbee. This seems to be the opinion of Dr. Watts, (*Ranking's Abstract*, vol. i. p. 219.) who mentions that great obesity, or "*the production of fat, is one of the precursors of diabetes.*"

Supposing this form of diabetes and dropsy to be isopathic, we find a similar sentiment expressed by Spenser in his "Faerie Queene," which we give as being more curious than useful.

> "Full of diseases was his carcas blew,
> And a DRY DROPSIE through his flesh did flow,
> Which by misdiet daily greater grew—
> Such one was Gluttony, the second of that crew."—Book I. canto iv.

† Med. Chir. Rev., vol. xli. p. 11.

‡ Ibid., vol. xlii. p. 521.

diseases. Among these latter we may mention a form of *eczema** and *impetigo*, and we think the disease known as *molluscum* may very properly come under this head. From the descriptions which I have seen of it, it seems to bear a close resemblance to the disease among horses called by Dr. Coleman "*scrofula farcimen.*" Under the same species we would rank also the Greek and Arabic Elephantiasis, which, notwithstanding the high authority of Dr. Good, we regard in common with Pinel and many other writers, as the same disease, both being forms in which scrofula may manifest itself in hot or tropical climates.

Liberty County, Geo., May 10th, 1847.

ART. IV.—*Amputation above the Shoulder-joint.* By DAVID GILBERT, M.D., (of Gettysburg, Pa.): Prof. of Surgery in Medical Department of Pennsylvania College, Philadelphia.

IN furnishing the following case for publication, the object is to present to the profession the facts and circumstances connected with it, that each one may compare and collate these with others hitherto had, in making his deductions, when called upon to decide in emergencies of a similar character. The writer, in his private practice, has always been opposed to a speedy resort to operative procedures; and as a public teacher, has never advocated *heroic surgery.* In his first *introductory lecture*, published by the class of session 1844–5, he thus expresses himself. "Let your knowledge, therefore, of this branch (Mat. Medica) be minute and accurate, and you will be surprised at the victories you are able to achieve over disease, and to find how frequently you can dispense with the knife, which should always be your *last resort*, and to succeed without which should be your constant aim." The same principles are advocated in the published *introductory* of last session; whilst in the regular lectures of the course, on *operative surgery*, the importance of deferring the use of the knife until every other plan of treatment has failed, or is unavailing, is constantly inculcated. Whatever of novelty or of boldness, therefore, is apparent, at first view, in this case, since it extends beyond the ordinary limits of operative surgery, it is believed, is justified by the nature of the disease, the condition of the part, and the circumstances of the patient, and is in entire consistency with the established axiom in Surgery, "that operations ought to be performed only when the danger and inconveniences to which they expose the patient, are less than those of the disease treated otherwise."

Whilst on a professional visit, during the summer of 1846, to the *valley of the Susquehanna*, my advice was solicited in the case of the Hon. J. Wagonseller, M.D., of Selings Grove, Union County, Pa.

* Vide Lugol, Researches and Observations on the Causes of Scrofulous Diseases, and Med. Chir. Rev., vol. xlvi. p. 258; ibid., xxxviii. p. 508.

I found the Doctor confined to his bed, and suffering intensely from an enlargement of the left shoulder and parts adjacent. During the summer, he had also had an attack of *intermittent fever*, and subsequently *hepatitis* supervened, from which he had not yet entirely recovered, there being pain in side, evening exacerbations of fever, excretory functions deranged, &c. His attending physicians, Drs. Shindle and Hottenstein, at the period of my visit, were directing their treatment towards the removal of the latter affection.

The enlargement and irritation of the shoulder were paramount, however, to the diseases mentioned, and it was to these that my attention was specially directed.

The following history of the case was given me by the attending physicians, and the patient himself.

In Oct. 1845, eleven months previously, he was thrown out of a small wagon, whilst traveling rapidly, and the whole force of the fall was expended upon this shoulder, which came in contact with the ground. The effect was, severe contusion of the part, without either fracture of any of the bones, or dislocation of the joint. The tumefaction and subsequent inflammation gave way to appropriate treatment, after a few weeks, but were not entirely removed; the remaining enlargement and inflammation resembling ordinary chronic rheumatism. During the succeeding winter, he attended to his duties as the Representative of his district, in the Senate at Harrisburg. The affection of the shoulder continued during the session, so that the functions of the entire arm and hand were greatly impaired. Soon after his return home, subsequent to the adjournment of the Legislature, in May 1846, whilst standing on the platform of a canal packet, about two feet lower than its deck, upon which his left hand rested, he made a sudden effort to recover his umbrella which had fallen into the water at the side of the boat. The water being lower than the platform, he lost his equilibrium, to regain which, he made the effort with his injured arm, which resulted, as was then supposed, in fracture of the upper part of the humerus, and dislocation of its head; there being deformity and crepitus. Tumefaction of a most painful character speedily took place, which rendered manipulation and the necessary extension, and counter-extension insupportable. Owing to this, efforts to ascertain the precise nature of the injury, and to reduce the deformity, were abandoned, before any satisfactory results were had. The succeeding inflammation, although violent, yielded, after several weeks, to the general and local treatment employed. Although the tumefaction was greatly reduced, and deformity was apparent, yet the precise nature of the injury, so far as the bones and joint were involved, could not be satisfactorily decided. In July, about six weeks after the accident occurred, he visited the city of Philadelphia, for the purpose of consulting some of his medical friends there. Not having obtained any satisfactory opinion as to the precise nature of the injury, or the treatment to be pursued, he returned again to the country. Soon after his return, he met with Joseph Lutz, M.D., of New Berlin, who suggested the use of Dr. Fox's apparatus for fracture of the clavicle, which corrected the deformity, and relieved the pain and seemed to answer every indication; but in a few hours the pain returned so as to be insupportable, and thereafter every form of mechanical support was discontinued.

From this period, the shoulder commenced steadily and regularly to en-

diseases. Among these latter we may mention a form of *eczema** and *impetigo*, and we think the disease known as *molluscum* may very properly come under this head. From the descriptions which I have seen of it, it seems to bear a close resemblance to the disease among horses called by Dr. Coleman "*scrofula farcimen.*" Under the same species we would rank also the Greek and Arabic Elephantiasis, which, notwithstanding the high authority of Dr. Good, we regard in common with Pinel and many other writers, as the same disease, both being forms in which scrofula may manifest itself in hot or tropical climates.

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The following history of the case was given me by the attending physicians, and the patient himself.

In Oct. 1845, eleven months previously, he was thrown out of a small wagon, whilst traveling rapidly, and the whole force of the fall was expended upon this shoulder, which came in contact with the ground. The effect was, severe contusion of the part, without either fracture of any of the bones, or dislocation of the joint. The tumefaction and subsequent inflammation gave way to appropriate treatment, after a few weeks, but were not entirely removed; the remaining enlargement and inflammation resembling ordinary chronic rheumatism. During the succeeding winter, he attended to his duties as the Representative of his district, in the Senate at Harrisburg. The affection of the shoulder continued during the session, so that the functions of the entire arm and hand were greatly impaired. Soon after his return home, subsequent to the adjournment of the Legislature, in May 1846, whilst standing on the platform of a canal packet, about two feet lower than its deck, upon which his left hand rested, he made a sudden effort to recover his umbrella which had fallen into the water at the side of the boat. The water being lower than the platform, he lost his equilibrium, to regain which, he made the effort with his injured arm, which resulted, as was then supposed, in fracture of the upper part of the humerus, and dislocation of its head; there being deformity and crepitus. Tumefaction of a most painful character speedily took place, which rendered manipulation and the necessary extension, and counter-extension insupportable. Owing to this, efforts to ascertain the precise nature of the injury, and to reduce the deformity, were abandoned, before any satisfactory results were had. The succeeding inflammation, although violent, yielded, after several weeks, to the general and local treatment employed. Although the tumefaction was greatly reduced, and deformity was apparent, yet the precise nature of the injury, so far as the bones and joint were involved, could not be satisfactorily decided. In July, about six weeks after the accident occurred, he visited the city of Philadelphia, for the purpose of consulting some of his medical friends there. Not having obtained any satisfactory opinion as to the precise nature of the injury, or the treatment to be pursued, he returned again to the country. Soon after his return, he met with Joseph Lutz, M.D., of New Berlin, who suggested the use of Dr. Fox's apparatus for fracture of the clavicle, which corrected the deformity, and relieved the pain and seemed to answer every indication; but in a few hours the pain returned so as to be insupportable, and thereafter every form of mechanical support was discontinued.

From this period, the shoulder commenced steadily and regularly to en-

large, although local depletion and counter-irritation, with general treatment, were persevered in, by the attending physicians. On examination, (September 2,) I found the shoulder enormously enlarged, measuring 21½ inches in circumference, from the axilla over the acromion, and 15 inches from the same point, horizontally around upper part of arm, whilst the measurements of the sound shoulder at corresponding points were 11 and 8¼ inches. The tumour presented the appearance of a large segment of a regular sphere united to, and blended with the shoulder sending off several processes. One of these extended down the posterior part of the arm along the triceps muscle to within five or six inches of the elbow-joint; a second backwards, within the fold of the tendon of the latissimus dorsi muscle, over the inferior costa upon the infra-spinatus muscle of the scapula; and another forwards and upwards over the coracoid process of the scapula, and resting firmly against the lower surface of the acromial extremity of the clavicle. The skin covering it was brawny—thickened and porous; as the normal skin appears when seen through a magnifying glass. The whole tumour was tender to the touch, especially at the acromion, so that manipulation was intolerable. It was hard—indurated; indeed the portion which extended backwards with tendon of lat. dorsi muscle, was mistaken by the patient himself for bone, supposing it had been displaced at the time the last injury was sustained and remained undiscovered until after the enlargement had taken place. There was no deformity apparent, such as arises from fracture or dislocation, being obscured by the enlargement. The tendons of all the muscles connected with the shoulder were in their normal condition, except that of the lat. dorsi, which was connected with the posterior extension of the tumour. Motion at the joint was not entirely lost, but every effort to move the limb produced pain.

In this condition of the shoulder and arm, it was impossible to form an opinion as to the precise character of the lesions produced at the period of the last injury, or whether fracture or dislocation yet existed.

From the history of the case, however, I had no doubt that there had been fracture near the head of the bone, possibly of the tubercles only, or even the neck of scapula might have been the seat of the fracture. The indurated mass enveloping the shoulder, and extending to parts adjacent, I supposed might have been the result of an exaggerated effusion of lymph, which, on account of the impaired health of the patient during the summer, and the diseased condition of the shoulder, from the first injury, was not assimilated or absorbed, but partook of an abnormal character. Deposits of this nature are apt to take place when inflammation is long continued in subjects in whose blood fibrine abounds, and the red particles are scanty, a condition which there was every reason to suppose was here present. The patient is of bilious temperament, and aged forty-six.

The following treatment (Sept. 2) was agreed upon.

For the hepatic affection, now having become chronic, laxatives, consisting in part of *blue mass*, pro re natâ, with gtt. v of nitro-muriatic acid, three times a day, to be increased one drop a day, each dose; and daily pediluvium of the same, of the usual strength. Cups to side.

To the shoulder, an iodureted iodide of potassium ointment, one-third stronger than the "unguentum iodini compositum," to be applied daily to the tumefied parts, which are to be covered with silk oil-cloth. Diet mild, and nutritious.

Sept. 17. Patient's condition greatly improved. Pulse 90, pain in the

side relieved, tongue cleaner, appetite better, and sleep sound and refreshing. The shoulder free from pain when kept quiet, feels more natural, not so sensitive when handled, and is less indurated.

The ointment had produced miliary vesications with subsequent desquamation of the cuticle, leaving a smooth surface with a more natural colour. It was agreed that the treatment should be continued.

I received a letter from Dr. Shindle, dated Sept. 13th, in which he reports continued improvement of the general health, without change in the shoulder. The amount of acid taken at this date is 17 drops at each dose, or 52 drops daily. Advised continuance of treatment, with more generous diet, and exercise in his room.

In another letter, dated Sept. 18th, Dr. Shindle reports, that patient continued to improve until the 16th inst., when, in consequence of a sudden change of the weather, he took cold and had a return of fever; this had, however, yielded to antiphlogistic means, the exhibition of the acid being suspended. At the urgent request of the patient and the doctor, I visited him on Sept. 24th. Found him greatly improved in general health, and his spirits were quite revived. Able to be out of his bed during the greater portion of the day. Appetite good, pulse 85, fuller and less quick; skin and tongue natural, bowels rather torpid, pain of side entirely gone. Shoulder about one-fourth of an inch larger in circumference, colour a lighter red, friction pleasant, and free manipulation can be tolerated. Gave it as thorough an examination as was possible, in its enlarged condition. Passed the ends of my fingers up from the axilla under the coracoid process, head of scapula, as well as inferior costa, but the parts were so enveloped in and bound together by, the adventitious morbid mass, that it was impossible to discover any lesion or displacement. I could not observe any motion at the joint; all efforts to produce this by using the humerus as a lever gave intense pain. The great bulk of the tumour lay on the outside of the upper third of the humerus, which it surrounded. It extended up, and was attached to the outer third of the clavicle, and to the coracoid, acromion, part of the spinous process, and head and neck of the scapula. The organic alteration of the skin extended wherever the tumour was found, except the process which extended backwards under the lat. dorsi muscle. The muscles adjoining and those connected with the shoulder and arm, were in their normal state, except where they became involved in the enlargement. Here they were so intimately united to and blended with the general mass, that it was impossible to decide whether they were incorporated with it, and partook of its abnormal condition, or were merely pushed aside by the deposit. The length of the arm from the olecranon to the acromion, as nearly as could be ascertained, was the same as that of the other side.

The acid and bath with laxatives occasionally were continued, as also the application of the ointment of the ioduretted iodide of potassium, increased to double the strength of the officinal preparation.

Visited patient daily, until 29th, during which there was improvement of general symptoms. He again became interested in business, and enjoyed the visits of his friends. Size of shoulder stationary.

Oct. 7th. Received a letter from Dr. Shindle, who reports that his general health is without change. Size of tumour stationary above, but is extending towards the elbow, along the course of triceps muscle. Continue treatment.

Visited patient Oct. 15th. Found him sufficiently strong to leave his

chamber to visit the store, which is at some distance from his dwelling, and to ride out in his carriage occasionally. The shoulder slightly enlarged, measuring one inch more in circumference than when first seen (Sept. 2), and enlarging posteriorly, downwards.

Advised the application of cantharides ointment over the latter, and after the removal of cuticle, to be dressed with very weak iodine ointment. The acid to be suspended, and pills composed of ext. taraxaci and ext. hyoscyami, grs. ij of each, to be taken every evening at bed-time.

Saw patient again, October 20. Blister had drawn, but iodine ointment could not be endured. Ordered savine ointment, to keep surface discharging. Continue balance of treatment advised previously. Allow generous diet, with exercise in the open air, when weather permits.

In taking leave of the patient, he informed me, that, in accordance with the advice of his physicians and other friends, his intention was to visit Philadelphia, as soon as the term of *Medical Lectures* commenced in November, for the purpose of being under my care during the winter.

Having participated in the treatment of this case for nearly two months; and having found that whilst his general health improved, the local affection was nevertheless increasing, although depletion, revulsives, sorbefacients and alteratives, had been perseveringly and unremittingly used in the treatment, I began seriously to think of the propriety of an operation. I communicated this to Dr. Shindle, at my last interview with him, and he concurred in the opinion that it afforded the only ground of hope in the case, for permanent relief. Nothing was said as to the kind of operation that might be necessary. In reflecting upon this, subsequently, the difficulties which presented themselves to my mind, as to the manner of its accomplishment, in a case so peculiar, were of the most formidable character. The first question was as to the possibility of removing the tumour by dissection and thus saving the arm. This was desirable, even if the functions of this important member were to be greatly impaired. The impracticability of this, however, was apparent at once, for there was no external evidence that the tumour was distinct from the tissues of the arm and shoulder; it invested, moreover, the whole circumference of the joint and upper portion of the humerus, including the blood-vessels and nerves, so that if even the whole mass was unconnected with the muscles, tendons, blood-vessels and nerves, the lesion necessarily consequent to such an operation, would be too extensive, and the danger of exposing these important organs too imminent. Again, there was the uncertainty in reference to the condition of the bones and joints; there might be fracture of the neck of the scapula, or of the upper portion of the humerus; possibly of both, and certainly of either one or the other; since all accounts agree that both crepitus and deformity were present after the receipt of the last injury. The removal of the tumour alone being neither certainly practicable, nor if practicable, safe, the question of *amputation* presented itself. The operation of amputation at the joint was next considered. The apparently firm attachment of the mass to the acromion, portion of spinous and coracoid process of the scapula, and the outer extremity of the clavicle;—the uncertainty as to the seat of fracture, and condition of the joint;—and the utter impossibility of forming a flap, since the skin over the whole tumour up to the acromion and clavicle, would require removal, being unsound, at once constrained me to abandon all hope of relieving the patient by amputation at this point. The remaining alternatives then were, either to aban-

don the idea of an operation altogether, or to perform one sufficiently above the joint, to ensure the entire removal of all the parts involved in the injury, or subsequent formations, and to form a flap out of healthy parts, to ensure closure and cicatrization of the wound. This would require the amputation of the outer three-eighths of the clavicle and the acromion, and part of spinous process, coracoid process, and head and part of the neck of the scapula. The whole of the diseased mass would thus be removed, and the cut extremities of the clavicle and scapula would meet against the ribs, whilst the soft parts covering them could be easily approximated so as to close the wound. This operation, although more tedious, the amount of lesion not being greater, would be quite as safe, and the articular surface being removed, result in more speedy cicatrization, than amputation at the joint, even were there a sufficiency of integument to form flaps. Viewing this modification of amputation of the superior extremity as practicable, though much more formidable than that usually performed, and considering it the only one at all justifiable in this particular case, his age and general state of system being favourable, I resolved to propose it in consultation with others, provided the Dr. visited the city, as was contemplated.

I did not again see the patient until he arrived in the city, which was on Nov. 12th. In the meantime, however, by correspondence with the attending physician, I learned that, with the exception of symptoms of debility, his health underwent no material change. The treatment advised at my last visit had been pursued without any essential variation. On examination I found his system in an irritable as well as failing condition. Pulse from 95 to 100, appetite impaired and variable, skin dry and harsh, bowels torpid, urine high coloured and scanty, sleep imperfect and unrefreshing, and an expression of countenance indicative of great physical and mental uneasiness. He complained of neuralgic pain in the right sacro-iliac region. Of this he had occasional attacks during my visit in the fall. The following liniment had afforded relief, and was now prescribed. ℞. Ol. olivar, aquæ ammonia fort., āā ℥iss. Misce, dein adde Ol. origani, tr. opii, āā ℥ss.—M. ft. linimentum. The tumour had increased three-fourths of an inch in its larger, over the shoulder, and one inch in its smaller or lower circumference around the arm, since the dimensions were last taken, and had extended still farther down the posterior part of the arm. The amount of adventitious mass here present is more clearly indicated by comparing the *planes* of the respective circumferences with each other; these are found to be 47 and 25 square inches in the diseased, and 10 and $6\frac{1}{2}$ square inches in the healthy shoulder and arm. The parts involved are now much more painful than they have been since the pain yielded to the application of the ointment in the commencement of September, which is evidently one cause of the general irritability of the system now present.

At my request, my friend and colleague Dr. Atlee was invited to see the patient in consultation with me on Nov. 13th. After giving him a full history of the case, and after careful and repeated examinations made by him of the patient during several successive days, and observing the effect of treatment, there being no improvement, I communicated to him my conviction as to the hopelessness of mere medical treatment, in which, as well as the character of the operation proposed, the Dr. fully concurred. I now, for the first time, made known to the patient that an operation would have to be performed, and found that his mind had been prepared for such a communication by his own reflections. It was then

agreed that George M'Clellan, M. D., be called into consultation on the 17th, who confirmed the views entertained by us; viz., that amputation above the joint, so as to remove the entire mass of disease, and form flaps for closure of the wound, was the only remedy; and as the patient was failing in strength rapidly, there should be as little delay as possible. The patient was now informed as to the precise character of the operation contemplated, and as being the only one, in the opinion of all his medical advisers, that was available in his case. Subsequently all the details of the operation, its immediate and consequent dangers, the possibility of the return of the disease, and its irremediable and certainly fatal nature, if permitted to remain, were all fully made known to him and his friends. He received these communications with the utmost calmness and fortitude, propounded numerous inquiries relative to every question involved, both as to the tumour and the operation and its results. Being himself an intelligent physician, although not engaged in practice for several years, he seemed well aware of the risk incurred by the operation, and the nature and results of his disease if left to itself. He examined minutely its symptoms and rapid progress, although he was at this time so reduced that he was confined to his bed entirely. After thus weighing all the probable results and consequences, in either event, and in view especially of the great importance to his family of even a prolongation of life, on account of his numerous and weighty mercantile and other engagements, he resolved that the operation should be performed on the following Saturday morning, (the 21st,) at ten o'clock, being nine days after his arrival in the city. The decision having been made, his mind seemed to be at ease, awaiting the period appointed with a settled resignation, occupied in making such arrangements as were necessary, provided he should not survive the immediate shock of the operation.

Having made every necessary preliminary arrangement, the operation was performed at the time specified, in the presence of Drs. W. L. Atlee, Geo. M'Clellan, W. Darrach, Wiltbank, Patterson, Grant, Babb, Meckly, Jno. M'Clellan, and Wilson, at the Merchant's Hotel, North Fourth street, Philadelphia, in the following manner, viz.:

The patient having taken gtta. L. of M'Munn's elixir of opium one hour previously, was placed upon his right side, on a large dining table, with the leaves down. This had been prepared by covering it with folded blankets and sheets, and over these an oil-cloth was spread. The axillary artery was compressed, where it passes over the first rib, by Dr. Atlee, with a compress and letter seal of large size. The arm having been given in charge of Dr. Geo. M'Clellan, I took my station near the upper end of the table, above and behind the diseased shoulder of the patient, and commenced an incision at the posterior border of the axilla, using a large sized scalpel, and extended it upwards one inch above the highest portion of the spine of the scapula. The next incision commenced where the first crossed the spine of the scapula, and extended downwards and forwards to the point of the shoulder, thence upwards and inwards along the lower edge of the clavicle to the extent of the outer third of the latter, and then upwards one inch above its superior margin. The triangular flap thus formed above the shoulder was dissected upwards, and the clavicle inside of its outer third isolated. A retractor was passed under it, and the bone thus exposed was divided with the straight edge of Hey's saw. The skin, posterior to the first incision, covering the process of tumour which extended backwards over the dorsum of the scapula, was now reflected backwards, and the latis-

simus dorsi, and teres major muscles divided beyond the limits of the posterior extension of the disease. The infra and supra spinati muscles were next cut across, and the spinous, immediately behind the acromion process, and the neck and body of the scapula exposed. The spinous process was cut obliquely from behind forwards and inwards to neck of the scapula with the common amputating saw. The neck, with part of the body of the scapula, was then sawn through close to the spinous process, with a long narrow instrument provided for this purpose. All the bony connections being now severed, an incision with a small catlin was commenced at the axilla, and carried forwards and upwards through the skin and pectoralis major muscle, so as to expose the axillary artery, (which was promptly secured,) then upwards, under the clavicle, and outwards under the coracoid process, and head and neck of scapula; dividing all the remaining attachments, and the operation was concluded. But one artery besides the axillary, viz., the external mammary, required ligature. The amount of blood lost, in the opinion of all present, did not exceed ten ounces. The bleeding was principally venous, so effectually had the artery been compressed. The surface of the wound was now carefully examined, and all suspicious tissues, and remaining lymphatic glands, were removed. The patient endured the operation, (which lasted fourteen minutes, including the time occupied in tying the axillary artery,) with remarkable firmness, asking questions as to its progress, &c. Syncope did not take place. Immediately after the operation the pulse was small and feeble, and in frequency 134. Gave patient weak brandy and water as drink. The surfaces of the wound were brought together, and the parts adjusted one hour after the completion of the operation in the following manner: The cut extremity of the remaining (about five-eighths) fragment of the clavicle received the cut surface of the body of the scapula, both resting upon the ribs at their place of junction; the triangular flap of integument, made early in the operation, above the acromion and outer end of clavicle, was brought down and completely covered the extremities of the bones which were in contact with each other; below this, the lateral flaps of integument were brought together, and the apposition of all the parts secured with five sutures, and six or eight long and broad bands of adhesive plaster. The ligatures by which the arteries were secured, were brought out to the nearest point of surface to their place of attachment, and secured by an adhesive strip. Lint wet with cold water was laid over the wound thus dressed, and a common roller applied over and around the body. The patient was carried to his bed at twelve o'clock —precisely two hours after he had left it for the operating table. Pulse at this time 120. Continued weak brandy and water as drink, and applied cold water to wound occasionally.

4 *o'clock P. M.* Pulse 145; ordered gruel with brandy and water as drink. 12 *P. M.* Pulse 140; has slept during evening; had taken gruel; skin moist but cool. Gave gtta. xxx of M'Munn's elixir of opium.

Nov. 22*d.* Seven A. M. Found patient refreshed, having rested well during the latter part of the night. Pulse 116, with greater volume and power; feels comfortable. Gruel for nourishment; discontinue brandy and water.

23*d.* Seven A. M. Patient slept during the greater part of the night. Pulse ranged from 110 to 118 during the day. No material change in the other symptoms, and treatment continued without variation.

24*th.* Condition of patient favourable until four o'clock, P. M., when

the skin became dry and warm; the pulse rose to 125, and became quicker and harder. Complains of thirst. Ordered the head and face to be sponged with cool water, and the internal exhibition of bicarb. potassa, grs. v, every two hours. The bowels having been sufficiently open since the operation, no laxative was given. 12 *o'clock P. M.* Febrile symptoms have declined, pulse 110, skin moist and warm, other excretions sufficiently free. Had taken gruel and a solution of gum Arabic as drink.

25th, 7 *o'clock A. M.* Has slept well since 12 o'clock. During this day symptoms continued favourable, appetite good, pulse 104. Continue diet and drink.

26th. Symptoms all favourable, and had rested well during the night. 10 *A. M.* Opened wound, (5 days after operation,) Dr. ATLEE present.—Found nearly the whole of it united by first intention. No discharges. Some of the adhesive strips were removed, and fresh lint was applied.

Nov. 27*th.* Case progressing favourably. Wound again opened, presented a favourable appearance; lint and adhesive plasters renewed.

Dec. 1*st.* Patient gaining strength. Some of the stitches removed, and other dressings renewed. Diet gradually improving. No medicine required. No discharge from the wound, it having united throughout except some points of integument at the sutures. The general symptoms were of the most favourable character, appetite, sleep sensations, &c., all good. The bowels being rather loose, were restrained by the exhibition of toasted rhubarb.

After this the shoulder was exposed daily, the remainder of the sutures were removed on Dec. 3d, and lint was applied to the cicatrizing points of the wound. The general health of the patient continued to improve, so that on the 11th of December, three weeks after the operation, he was able to sit up the greater part of the day, walk about his room, partaking of ordinary diet and enjoying life and the society of his friends, with renovated feelings, and the confident hope of a speedy restoration to health. The projection of the shoulder, reduced to one-third by the operation, had a rounded appearance, the spinous process having been cut off obliquely; and the remaining portions of the clavicle and scapula, thus united, performed their offices, in reference to their attachment with the muscles of the trunk and head, quite as well now as they did previous to the operation.

Before the close of another week, however, these bright prospects were destined to undergo a serious change. On the 16th of Dec., I was hastily summoned to my patient, whom I found in the cold stage of *intermittent fever*, which he had had when it prevailed extensively in the valley of the Susquehanna, during the summer and fall previously. This yielded in a few days to the ordinary treatment. Very soon, however, a more obstinate and less tractable affection, viz., the *neuralgia* of the loins, again made its appearance. This was now much more severe than at any previous period, extending to the sacro-iliac region of the left side also. From this period (Dec. 20th), until March, all the various plans of general and local treatment for neuralgia, known to the profession, (having had the advice of several medical gentlemen, as well as of his regular attending physicians,) were successively and fully tested, without accomplishing any other than temporary amelioration of the pain. During this time, the patient was generally able to be out of bed part of the day. His appetite was tolerably good, and his strength did not decline materially. It was evident that the meteorological condition of the atmosphere exerted an influence upon his

sufferings, and hence the hope was entertained, that as soon as the genial warmth of spring and summer returned, his pains would subside and health might be restored. As spring approached, he made his arrangements to return to the country, and accordingly on the 5th of March he left Philadelphia in the cars for Harrisburg, where he remained until the adjournment of the Legislature took place, and then returned home to Seling's Grove, in a packet boat. After his return to the bosom of his family and the society of his friends, he continued to suffer from the neuralgic affection, and in addition, symptoms of disease within the chest began to develop themselves, such as pain, stricture and dyspnœa; these symptoms continued to increase, and his lower extremities becoming œdematous, he expired on the 27th of April, no doubt in consequence of *effusion within the chest.* During his sojourn in Philadelphia, his highly esteemed friend, Isaac N. Shindle, M. D., of Seling's Grove, a young physician of great promise, died; and having no confidence in any further remedial treatment in his case, he did not regularly employ any other physician after his return. My information, therefore, in regard to the progress of the case after this, being derived from non-professional friends, is necessarily imperfect. This I regret exceedingly, as also that no full post-mortem examination was had. I had written to one of his friends and requested this, but an examination of the shoulder only was made. From this it appeared that some of the lymphatic glands under, as well as on, the scapula, had become enlarged and softened, "presenting the appearance of the brain of fish."

The ligature of the external mammary artery came away at the close of the fourth week, whilst that of the axillary remained until in the eighth week after the operation.

The arm and shoulder with the diseased mass, as removed, have been added to the *Pathological Cabinet* of the Med. Dept. of Penn. College. A dissection was made, and the anatomical and pathological condition developed was as follows. The integument was thickened and indurated; under this, the cellular tissue was firm and condensed, not permitting the skin to glide smoothly over the parts beneath. In tracing the muscles, from without the limits of the tumour, where they were in their normal condition, it was found that they passed over, around or under the tumour and its processes, without being involved in its substance, or contracting any firm adhesion with it. Thus the coraco-brachialis, deltoid, biceps flexor, triceps extensor, teres major, latissimus dorsi, pectoralis major, &c., could all be traced to their origin or insertion, and dissected from the tumour; the only alteration observable, being elongation and attenuation of those portions which had been connected with the tumour. The blood-vessels and nerves could also be dissected out, having no other connection with the tumour than by condensed cellular tissue external to their sheath. The tumour thus exposed, presented the appearance of a large lobulated homogeneous mass, of a dull pink colour, resembling the pancreas, in structure and colour, and therefore we had very little difficulty in deciding that it belonged to the "*pancreatic sarcoma*" of authors.

The head of the bone was found in the glenoid cavity, without any evidence of its ever having been dislocated. The synovial membrane of the joint did not present a perfectly healthy appearance; a portion covering the head of the bone, as also a portion of that lining the glenoid cavity, had lost its lustre, and was slightly thickened.

The humerus had been the seat of comminuted fracture immediately below its anatomical neck and tubercles. From this point downwards, in-

cluding nearly the upper half, it was destitute of the animal constituent of bone; the earthy, when the periosteum was removed, not having the usual cohesive properties, was exceedingly friable, so as to be broken down by the pressure of the finger alone. This disintegrated condition of the humerus extended down farthest posteriorly; that being the surface of bone next to the posterior process of the tumour, so that the sound portion of the humerus, at its upper end, presented the appearance, after separation, of the disorganized bone having been fractured obliquely at that point.

The following question presents itself in reference to the pathological condition thus displayed. May not an unreduced comminuted fracture, as a continued irritant, so derange the nutritive process, at and about the seat of accident, as to induce an abnormal callus, constituting this local accidental *carcinoma* in the form of *pancreatic sarcoma*, as here found? All this may occur without a carcinomatous condition of the blood; the cacoplastic deposit may be wholly owing to the continued local irritation, and implicate carcinomatously only the seat of irritation.

This inorganic deposit is entirely dependent on the nutritive function of the part in which the deposit is made, unless subsequently it should assume some one of the malignant forms of *cephaloma*, in which the organic deposit possesses itself properties by which its subsequent developments are affected, independently of the nutritive functions of the parts in contact, except so far as the material of growth may be derived from this source. The former condition, or *carcinoma*, apparently from mere local causes, being present, in the case of our patient, and all the external indications, such as cachexy, &c., of the latter state being absent, we were encouraged to hope that a permanent immunity from the disease would be secured by the operation. Such results, however, were at all times spoken of with due precaution. But our object is to present the facts of this case merely.

The issue, we trust, has proved, that where an operation above the joint becomes necessary, its performance is not only practicable, but subsequent union of the wound is more speedy, and recovery quite as certain as when performed at the shoulder-joint. It is, however, liable to all the dangers incident to operations of the largest class, after which the persistence of life is precarious, even under apparently the most favourable circumstances; and when associated with other diseased states of the system, as in the case of our patient, anticipations of entire success, however fondly cherished, are destined to meet with almost certain disappointment.

ART. V.—*Osteo-Sarcoma of the Lower Jaw. Removal of the body of the bone without external mutilation.* By J. MARION SIMS, M. D., of Montgomery, Ala.

JACK, a negro man, aged 68, the property of John M. Sanders, Esq., of Macon Co., Ala., was the subject of this operation. In 1843 he discovered a small tumour at the symphysis, just at the junction of the lip and gum. It was painless; grew very slowly; almost imperceptibly, till it gradually embraced nearly the entire body of the bone; the third molar tooth bound-

ing its limits on the right, while it extended quite to the angle on the left side. As in all such cases, the teeth were somewhat loose and greatly displaced. The left side was more prominent than the right. The tumour was very hard at some points; quite soft and elastic at others. Just at the root of the central incisors was a small opening, constantly distilling a serogelatinous looking fluid. At a point near the last molar, on the left, was another opening, giving vent to pure pus, which had been discharging for a month or more. His breath had the peculiar disagreeable smell always attending extensive ulcerations of the mouth. His general health was good. At night he would get sick, and vomit in consequence of swallowing the secretions from the diseased bone: not so during the day, as he would then spit them out.

The mouth of the patient was of enormous size, to which alone I was indebted for the happy thought of removing the bone in the manner in which it was done. The very moment that I first saw him, it occurred to me to take the bone out through the mouth without any external incision.

The operation was performed on Tuesday, 5th of January, 1847, with the assistance of Drs. Boling, M'Lester, Jones, Spear, and Taylor.

The first step of the operation was to separate the diseased from the healthy bone, which was effected by the chain-saw, thus:—with a long narrow sharp-pointed bistoury, I made a puncture at the base of the jaw immediately under the place of the second molar, on the right side, running the knife flatwise into the cavity of the mouth, between the cheek and the bone, and as close to the latter as possible. One end of the chain-saw was now passed along the blade of the knife, or rather an eyed tube, armed with a ligature previously attached to the saw, and the knife withdrawn. It was again introduced through the same external opening, but was now carried into the cavity of the mouth by thrusting it up on the inside of the bone, between it and the tongue. Through this new channel the other end of the chain-saw was passed, and both ends drawn, *pari passu*, till the middle of the saw rested against the base of the bone, while the ends hung out at the left corner of the mouth. Thus I had the saw fitting snugly around the bone at the expense of a puncture not more than a quarter of an inch long.

The jaws were now opened to the fullest extent, and the left angle of the mouth widely retracted, while the saw was brought across the dorsum of the tongue, and the bone quickly severed by sawing from without inwards, and slightly upwards. As soon as the bone was divided, the saw was liberated by clipping the super-imposed gum with scissors. In like manner the bone was divided on the left side; but, as it had to be cut right at the angle, to get clear of diseased structure, the saw had to be passed from within outwards and downwards, its two ends hanging out at the external opening just under the angle, and thus the bone was easily divided from above, downwards and backwards. The next step in the operation was to dissect the lip, chin and cheeks from this loose diseased mass, turn-

ing the lip down under the base of the bone. This required some little caution in putting the parts sufficiently on the stretch, and cutting close enough to the bone to avoid the facial arteries. After liberating the right side of the bone, getting it on the outside of the angle of the mouth, so that I could make a lever of it, the ease with which the operation was finished was a matter of great surprise to me. By rotating it inwards on the axis of the left side, it was easy to separate the attachments from the outer surface, and by reversing this movement it facilitated greatly the dissection from the muscles of the tongue and throat, while *traction* brought it so far out, that its separation from the soft parts at the angle gave no trouble at all. Just as the genio-hyo-glossi muscles were severed from their origin, the old man's head flew back, and he made a distressing sort of suffocative sob, when it was immediately discovered that the assistant was holding the ligature loosely, which had been previously passed through the frænum linguæ for the express purpose of preventing a retraction of the tongue. By seizing the ligature quickly, and putting it on the stretch, so as to draw the tongue forward, the cause of this sudden alarm was instantly arrested. The only artery requiring a ligature was the left facial, which was cut by a careless slip of the knife after it had been cautiously separated from its bed in contact with the bone.

The operation being completed, the cavity lately occupied by the diseased bone was filled with pledgets of lint, wet with creosote water, for the purpose of arresting the slight hemorrhage. The only dressing used was a bit of paste-board, soaked in warm water, and moulded on to the chin of a healthy man, so as to form a perfect encasement of the whole inferior maxillary region, which, being applied, was sustained *in sitû* by a proper bandage.

The day after the operation the old man was chewing tobacco. In two weeks he was out chopping wood; and in a month he went home perfectly well. His pulse was regularly 72 all the time, both before and after the operation.

There are several considerations to recommend this operation in preference to the usual one with its extensive incisions.

1st. There was no external mutilation; the slight punctures, through which the chain-saw was passed, healing by the first intention, without the least mark or scar.

2d. As the third branch of the fifth pair of nerves was divided at the outset of the operation, its subsequent stages were comparatively free from pain; the stretching of the angles of the mouth being the most that was complained of.

3d. As no important blood-vessels are cut, no ligatures are required. (In this case it was my fault that the left facial artery was wounded.)

4th. There was no trouble with the after-treatment.

5th. It is just as easy of performance as the old operation.

This method of operating will be available under all circumstances, but is only proposed for the removal of the body of the bone, or any portion of it anterior to the angles. If the mouth should be small, and the diseased mass too large to be brought through entire, it will be very easy to divide it near the symphysis, or elsewhere, as the judgment of the surgeon may determine, and remove a piece at a time. Of course, where the jaw has to be disarticulated, the *curvilinear incision*, first suggested and executed by our distinguished countryman, Dr. Mott, will always be indispensable.

ART. VI.—*Observations on Yellow Fever.* By E. H. KELLY, M. D., of Mobile, Ala.

AMONG the diseases of common occurrence in various portions of the world, which, from their fatality and the discrepancy of opinion that exists as to their true character, and proper mode of treatment, demand a more close and accurate investigation, may be ranked the Yellow Fever.

The difference of opinion which prevails among medical writers in relation to the pathology and therapeutical management of this disease, may, in part, be attributed to the circumstance of the more intense grades of remittent, or miasmatic fever, which are endemic in the same localities, and at the same seasons with the yellow fever, having been, in many instances, mistaken for the latter, but which, however closely they may resemble it, in many of their leading symptoms, differ from it essentially in character.

Having had, during a practice of sixteen years, in the cities of New Orleans, Charleston, and Mobile, ample opportunities of studying the yellow fever in all its grades, from the mildest to the most malignant, I have thought it would not be uninteresting to record the results of my observations. However imperfect these may be esteemed, they may nevertheless be useful as materials for the formation of a more exact history of the disease, than are most of those with which we have been furnished by European writers.

The yellow fever may be defined to be a distinct form of continued fever, consisting of a single paroxysm, varying in duration, but without any true remission from its commencement until its close. This single paroxysm may terminate favourably, in rapid and complete convalescence, or unfavourably, in a state of collapse followed by death.

In many cases, however, the first paroxysm of fever, when it terminates without the occurrence of collapse, leaves the organism in a state of susceptibility, that renders it peculiarly liable to a recurrence of fever. This consecutive fever is to be viewed as the result of the derangement of

the secretory functions—of visceral obstructions, or of a chronic inflammation of certain of the tissues, the sequelæ of the violent action existing during the first paroxysm—it is hence, a true epiphenomena.

It is this occasional recurrence of fever which has probably induced a few medical writers to attribute to yellow fever a true remittent or even intermittent character.

Although the disease possesses but very few essential, or strictly diagnostic symptoms, still these few are sufficiently pathognomonic to enable us to recognize the yellow fever, with great certainty, as a peculiar and distinct affection. They are—the turgidity of the vessels of the conjunctiva; the swollen suffused appearance of the eyes, and their pink, or red, muddy, or glassy appearance—giving to the countenance, in many cases, a drunken, besotted expression, which is, to a certain extent, characteristic. In the aged, from the intense redness of the adnata, and the dryness of the conjunctiva, the eyes assume a peculiar staring and ferocious aspect. There is always in the yellow fever a peculiar anxiety in the expression of the countenance, approaching to what is observed in tetanus, and which differs from that common in the more malignant forms of remittent fever. The lower eyelid is in some cases dark and swollen, as if blood were effused into its tissue. There is pain in the forehead and orbits, not diffused, as in bilious fever, and rarely extending even to the temples. There are, also, pains in the knees and calves of the legs with cramps, the latter being more remarkable in this than in the other forms of fever. An intolerable rachialgia is also a marked and peculiar symptom. There is increased sensibility of the epigastrium, with irritability of stomach and vomiting, the matters discharged consisting simply of the ingesta, or of a glairy fluid, rarely of bile.

The mental as well as physical powers become rapidly and greatly reduced. Great restlessness and jactitation are more severe than in almost any other fever. The tongue is often swollen, pointed, dry, and with crimson edges; it is coated throughout with a layer of a pasty consistence, or the coating terminates in a yellow fur towards its base. From the intumescence of the tongue, the pressure of the teeth gives to its edge a festooned appearance. Its papillæ become separated, and, as the disease advances, deep fissures appear to penetrate its substance.

The peculiar acid alliaceous odour of the breath, and the dark-coloured stools described by Louis, and which are distinguished from the dark dejections of typhoid fever by the absence of diarrhœa, meteorism, and stupor, are among the characteristics of yellow fever. The dark discharges peculiar to this disease, are never observed in cases of gastritis, from which the yellow fever differs essentially in its pathological character.

Ptyalism is more readily induced in yellow fever, than in the bilious remittent fever. The burning, acrid sensation in the stomach, the nausea, and the vomiting in the more advanced stage of the disease, are more pecu-

liarly distressing than in the other forms of fever—and the matter resembling the colluvies of port wine, or coffee grounds, discharged from the stomach in yellow fever, differs from the dark discharges from the stomach occasionally observed in the former.

The yellow colour of the surface, which has been regarded as pathognomonic, confined in some cases to the conjunctiva, the nose, lips, and ears, while, in others, it extends over the surface generally, varies from a pale lemon hue, in patients of a fair complexion, to a deep orange, in those who are naturally sallow.

A torpor more or less marked of the cutaneous capillaries, evinced by the slow return of the blood when pressed out by the finger, as if these vessels were in a state of passive hyperæmia, has been referred to as characteristic of yellow fever. I have myself observed it.

A special characteristic of yellow fever is the immunity from a second attack which those enjoy who have once been affected with the disease. Persons, on the other hand, who have experienced an attack of bilious fever acquire an increased susceptibility to its recurrence.

That yellow fever is not simply an aggravated form of bilious fever, is evident from the fact that the two diseases seldom prevail together; and that when both do occur simultaneously, the mortality of bilious fever is not increased. In 1824, '28, '37, '38, '39 and '40, when the yellow fever prevailed in Charleston, no cases of bilious fever were observed; the same fact was observed during the prevalence of the yellow fever in 1832, '33 and '35 in New Orleans, and in 1837 and '39 in Mobile. In 1840 and '41, however, the city of Mobile continued particularly healthy, while the surrounding country was very sickly.

While the yellow fever is only of occasional occurrence in many parts of the Southern States, an attack of bilious remittent of a most obstinate and malignant character, is endangered by sleeping for a single night, during the autumn, in these same localities, even in persons who are perfectly proof against the occurrence of the yellow fever.

According to Dr. Stevens, in bilious fever the blood, at the commencement of the disease, is cupped and sizy, which is not the case in yellow fever; in the latter disease, also, the serum has been observed to be of a deep orange colour.

Another characteristic of yellow fever is the fact recorded by Pym, Smith, and others, that its invasion occurs, in four-fifths of the cases, at night, and without the rigor by which fevers of a miasmatic origin are ushered in.

The foregoing circumstances, with the additional circumstance that, while the yellow fever is an endemic of the island of Barbadoes, where the bilious remittent fever has never prevailed epidemically, and that it prevails almost every year at Vera Cruz, in the neighbourhood of which no marshes exist, prove very clearly that the disease is a distinct and peculiar form of fever.

Indeed, so strongly marked is the diagnosis between yellow fever and the bilious remittent fever, that I have never found any difficulty in distinguishing the two diseases, unless the attack of the first was very mild, or occurred in children, in whom fever is often masked.

The supervention of yellow fever on an intermittent, or remittent, with the supposed mingling, in this manner, of their types, has been adduced as an evidence of the identity of the two diseases, and that the only difference is in their intensity. Such an argument is about as valid as it would be to infer the identity of small-pox and measles, from the fact that the first may supervene upon the latter.

It was a common occurrence, during the prevalence of the cholera at New Orleans, in the autumn of 1832, for a person to be attacked with yellow fever, and before, or as soon as the febrile excitement ceased, for the patient to be seized and quickly destroyed by the cholera in its most marked and malignant form. Yet no one inferred from this that the two diseases were identical in their nature.

A person may have been, as is known to be frequently the case, attacked with a chill, followed by a fever of an intermittent or remittent type, several months before the occurrence of an epidemic of yellow fever; during the latter, he is seized with a chill, supra-orbital pains, rachialgia, &c. These symptoms he supposes to be merely a recurrence of the disease under which he had been previously labouring. He nevertheless confesses that his sufferings are greater than they were before; and his fever, instead of continuing for six or twelve hours, or, if longer, with marked exacerbations and remissions every day, lasts, without any very manifest remission, for from thirty-six to seventy-two hours, and then terminates favourably, or in a state of collapse, with black vomit, &c. Now the question is, are the latter symptoms to be considered as indicating merely a recurrence or continuance, in a more aggravated grade of the original disease, or do they not rather mark the occurrence of a new and distinct affection?

I have invariably remarked that, whenever yellow fever supervenes during an attack of intermittent or remittent fever, the characteristic symptoms of the latter disease are immediately and entirely lost, and a new set of symptoms take their place; the fever is no longer marked by intermissions or remissions, and every thing indicates that we have to do with a very different affection from that which previously existed.

Without attempting to point out every unimportant symptom that may occur in the various grades of yellow fever, I shall confine myself to a description of the two modifications of the disease which are most generally met with; and which modifications may be referred to a difference in the temperament and susceptibilities of the individuals attacked, as well as to a difference in the intensity of the cause by which they are produced.

The phrases *inflammatory* and *congestive*, being those in common use, may be adopted to indicate the two modifications referred to.

The first, or inflammatory form, as it has been denominated, may or may not be ushered in by a chill; which, when it occurs, is soon succeeded by increased heat of the surface, and a sense of soreness or dull pain, with increased arterial action, throbbing of the carotids and temporal arteries, and a quick, full, tense, and strong pulse. The patient complains of acute supra-orbital pain, and severe rachialgia; a sense of anxiety and constriction, and of intolerable heat at the præcordia. He is desirous of cool air, and drinks. There soon occurs more or less nausea, which constantly increases, and terminates at length in a distressing retching or vomiting. The characteristic black vomit may occur at this early stage, but very rarely does. The abdomen becomes tense and tender upon pressure, from which the patient recoils with horror depicted upon his face. The conjunctivæ of the eyes become deeply injected and suffused; the face is flushed, the tongue swollen, flabby, and indented at its edge; its centre is coated with a yellow, or brownish fur, while the sides are of a deep crimson. The surface of the body is parched, and quickly assumes a yellow hue; occasionally, however, the skin is moist. The countenance has an anxious, gloomy, sad or impatient expression. There is great confusion of mind. The bowels are usually torpid, and difficult to move, and the urine is high-coloured and scanty.

This first stage lasts from four to twenty-four, thirty-six, or seventy hours, its average duration being about forty hours; when the second stage, which Lining denominates the stadium without fever, ensues. The pulse now appears natural, though somewhat weak; the eyes are less red, and have more of a yellow tinge; the pains of the head, back and loins, diminish; the skin becomes cooler, sometimes moist, but the moisture is unequally distributed over the surface, or confined to particular portions of it. The pain and sense of burning at the epigastrium diminish. The vomiting, which continues at intervals, is attended with less effort. The tongue is still coated with a dry, brown fur, cracked in the centre, with red edges, or it may become entirely or nearly clean. There occurs, in fact, so complete an improvement, in appearance, of all the more violent symptoms, that it is well calculated to deceive those who are unacquainted with the disease. The patient, in fact, declares that he feels well, and has often an appetite for food. He may even get out of bed, shave and dress himself, and, as I have known to occur, drink with his friends in congratulation of his fortunate escape from "the claws of Yellow Jack." But if, amid all this calm, he be closely observed, there will be detected a peculiar jactitation, and when he smiles, a risus sardonicus. He will often crave some crude and unwholesome food, as raw bacon, &c. There is also a propensity to deceive in his answers to your questions, which may lead, unless you are on your guard, to a false prognosis. If the peculiar lemon tint has not already spread

over the whole surface, you may detect it along the course of the vessels of the face, where, by looking carefully in an oblique direction, it will be readily observed.

This stage lasts from twelve to thirty hours, and glides gradually into the third stage. The symptoms of disease become more and more marked, and the prostration augmented; the pulse becomes rapid, unequal, and depressed; the patient faints on being raised from the recumbent posture; the skin assumes a bronzed or mahogany hue, which disappears when pressure is made with the finger, but slowly returns when the pressure is removed; the tongue is swollen, moist, and indented at the edges, and covered with a brown fur, having a darker streak along the median line; I have as often, however, seen it clean, with a very slight pasty coating, or of a deep fiery red, and occasionally bloody or dry, black, and cracked; the mouth, lips, and nostrils being covered with a similar dark-coloured exudation. There is acute pain at the epigastrium, especially during vomiting, which is without effort, or during hiccough. The matters discharged from the stomach, which were before simply the ingesta mixed with mucus, are now a dark-coloured flocculent fluid, varying in hue from a slate, to a dark-greenish, or chocolate colour, being often brownish, resembling muddy coffee. What are termed fly, or bees' wings, are now observed in the matters vomited; these are caused by the reflection of the light upon globules of mucus, to which are adherent particles of a black colour. The surface of the body is cold and clammy; black, acrid, and offensive discharges take place involuntarily from the bowels. Towards night the patient is usually affected with delirium; sometimes low and muttering, at others furious. Suppression of urine, hemorrhage from all the natural outlets, sighing, orthopnœa, vomiting, or eructations of an offensive gas, singultus, subsultus tendinum, convulsions and coma, usually precede death. Among the symptoms of this latter stage, intolerance of light, petechiæ, meteorism, &c., which, according to Gilkrest, are not liable to occur, are enumerated by Professor Harrison in the New Orleans Journal.

In the congestive form of yellow fever, the peculiar shrunken, ghastly, mottled, or ashy appearance of the features, in this modification of the disease, would seem to indicate a speedy termination in death, at the very onset of the attack. The eyes have a dull, red, glassy look; there is in some cases a dilatation of the pupils. The countenance has a sullen expression. The tongue is pasty, with patches of white fur, its edges and apex being red. There is but little vascular excitement, the pulse being weak and soft, or natural. Musgrave has known the pulse to be as slow as 44 in the minute.

The attack is generally sudden, and the prostration from the very onset of the disease such as to disable the strongest individual from retaining the erect posture. Giddiness, stupor and general lethargy quickly supervene, the patient often falling asleep even when you are questioning him. In

many cases there is delirium either of a transient character, or terminating in coma. The patient is usually taciturn; he utters no complaint, but still presents indications of suffering; or he may be entirely insensible, with his eyes wide open, and exhibiting great restlessness. Gilkrest states that he has known a lividity and coldness of the extremities, equal to what are met with in cholera asphyxia, to be present, while the chest and abdomen were preternaturally hot. The skin, in most cases, becomes bronzed, or communicates to the hand, when it is touched, a peculiar repulsive sensation. The epigastrium is tender to the touch, and hiccup, hemorrhage, and suppression of urine early occur. The discharges from the bowels are small, white, or resembling pus, and have a peculiar odour; or they may be of a pea-green colour, but, in general, indicate a deficiency of bile. The occurrence of the black vomit is soon followed by death. When the lungs are particularly affected, we have lividity of countenance, soreness of the throat, orthopnœa, &c. The black vomit is sometimes preceded by singultus. The tongue presents, occasionally, an appearance as though seared with a hot iron. The stools are sometimes of a gelatinous consistence. In some cases a low monotonous wailing is heard a short time before death; the patient covers himself with the bed clothes, and is incapable of answering questions. If he is disturbed, he will endeavour to bite, scratch, and kick with great fury. When a copious hemorrhage takes place from either of the natural outlets, the black vomit and suppression of urine are less liable to occur, and when neither yellowness of the surface nor hemorrhage precedes death, another train of symptoms occurs indicative of more extensive congestion. The patient is extremely restless, deranges the bedclothes, lays with his head over the side of the bed, and exhibits that peculiar state of indifference so common in persons labouring under sea-sickness. The tongue is dry, the papillæ are separated by deep fissures, the pulse is feeble and intermitting; there is a twitching or tremulous motion of the mouth and tongue, and, in some rare cases, trismus.

In the adynamic variety of yellow fever, which occurs in persons of deficient vital power, we have a somewhat different train of symptoms. The circulation, in these cases, is depressed; there are confusion of thought, dimness of vision, and severe headache. A sense of chilliness is succeeded by one of burning heat, under the arms and on the inside of the thighs. The pulse is small and weak, the eyes dingy, the skin of an olive hue, and spotted with vibices and petechiæ; profuse hemorrhages speedily ensue, and death takes place within four or five days. In some instances I have met excoriations about the nose, mouth, scrotum, anus and penis, a gangrenous appearance of blistered surfaces, hemorrhage from leech-bites, anthrax, buboes, and infiltration of venous blood in muscular parts.

A curious feature of yellow fever is exhibited in what have been termed the walking cases. The disease, in such cases, proceeds so insidiously, that the first indication of danger, sometimes of the attack, is the appear-

ance of the black vomit. An instance of this kind occurred in New Orleans in 1833. A Frenchman complained of being unwell. He consulted a medical friend, one of his own countrymen, to whose residence, about a mile distant from his own, he walked every day. On the fourth day of his attack I was called to him, and the first thing which met my view was the black vomit. Coma and death soon followed. Another case was related by Dr. R., formerly a respectable physician of New Orleans, but now deceased. A man came into his office, and said that his friends had persuaded him to consult a physician, although he himself believed there was no occasion for it; whilst conversing he asked for a basin, and threw up a large quantity of the black vomit. Now, in all such cases that have fallen under my observation, the disease had proceeded through its several stages; but the symptoms were of a less open and decided character. A late writer infers that the attack takes place, or that the disease is developed at the moment when its characteristic phenomena become fully manifested; but this opinion I cannot adopt until the evidences of its accuracy are adduced. In the Guzzerat fever, described by Gibson of the Bombay medical department, although the debility and extreme prostration occurred rapidly, nevertheless the disease is stated to have passed through its regular stadia.

Prognosis.—In forming our opinion of the probable result in a case of yellow fever, the age, constitution and residence of the patient, and the character of the prevailing epidemic, must all be taken into consideration. The symptoms which indicate an unfavourable result are a state of general depression taking place immediately upon the attack, or occurring suddenly at an early stage. The early appearance of a yellowness of the surface, similar, as Gilkrest remarks, to what occurs on ecchymosed parts, a line of yellowness from the nose to the pubis, or an olive or dark hue of the skin, is, likewise, unfavourable. Louis states that a loss of warmth in the extremities, with a relaxed and moist condition of the skin, occurs simultaneously with the black vomit. The other unfavourable symptoms are a weak, irregular pulse, deep sighing, severe pain, and an intolerable burning at the epigastrium and along the course of the œsophagus, and a shrivelled state of the hands, as in cholera. Suppression of urine was considered by Rush as a fatal symptom; a free secretion is not invariably, however, a favourable indication. Strangury is generally, but not always, favourable. A red protuberant eye, with dilatation of the pupil, is a very unfavourable symptom. The tongue being clean and red, or covered with a dirty brown fur, tremulous, or black and hard, with dark-coloured sordes adhering to the teeth and lips, is always indicative of danger. Hemorrhage from the nasal or buccal membrane, if it occur in the early period of the fever, is generally a favourable symptom. Vibices and petechiæ are, in the majority of cases, associated with great depression of the pulse and nervous system; still, like hemorrhage, they may be connected with a state of reaction. Incessant vomiting, and small whitish stools, having a sour odour, or bistre or clay-

coloured dejections, tenesmus, involuntary discharges from the bowels, are indications of approaching dissolution. Bloody stools, like the washings of beef, are generally favourable; but when black, grumous, and offensive, and associated with typhoid symptoms, they are decidedly bad. Gilkrest states, that an impacted state of the skin is always an indication of danger. A knitting of the eyebrows, a scowling, sinister look of the countenance, with an expression of horror when pressure is made upon the epigastrium, more jactitation, obstinate hiccup, subsultus tendinum, and the black vomit, are usually followed speedily by coma and death.

A state of pregnancy is always very unfavourable. "*Mulierem uteres gerentum morta quopiam acuto corripi iefbale.*"—Hipp. So, also, of the venereal desire.

A favourable prognosis may be founded on the pulse retaining sufficient strength after the third day; the skin becoming warm and soft; the vomiting, and the pains in the eyes, back and limbs, ceasing; the appearance of bile in the stools, which assume a greenish gelatinous consistence; and the occurrence of natural, quiet sleep.

Delirium, unattended with stupor, and a diffused pain in the head, are not to be considered as unfavourable symptoms.

When the fever is preceded by a decided rigour, the case is more hopeful than when no chill is experienced, the more malignant cases being seldom ushered in, as Rush remarks, by a cold stage. The tongue being covered with a light fur, indicates remaining vigour of constitution. The medical commissioners, Pariset, Francois, and Bally, who investigated the disease at Barcelona, in 1821, agreed that generally diffused, spontaneous sweats, with an abundant secretion of urine, were among the most favourable indications during that epidemic.

Anatomical Appearances.—In consequence of the settling of the blood towards the more depending portions of the body after death, the back of the neck, chest, abdomen, and the posterior portions of the extremities, assume a dark, purple hue, while the rest of the body is generally of a mottled, dusky yellow colour; and the scrotum, ears and extremities are of a darkish brown. A line of pale mottled yellow can be detected extending from the nose to the pubis. The muscles are dark and easily torn; the cellular membrane has a white, but unnatural appearance. These phenomena have led to the erroneous supposition that a rapid decomposition of the body ensues after death.

In the brain the dura mater is studded with dark spots and patches of lymph. A yellow serous effusion sometimes exists beneath the arachnoid. The substance of the organ itself is ordinarily firm, with increased fullness of its vessels. The choroid plexus presents often the appearance of a coagulum of blood. Dark-coloured blood is frequently met with at the base of the brain. Louis remarked, that in rapid cases of the fever the pia mater was deeply injected with blood, while, in the more chronic cases,

serous effusion was met with. Professor Harrison remarks, in the New Orleans Journal, that the lungs do not collapse as usual when the sternum is raised. These organs are usually found covered with dark-coloured patches, the tissues being here so completely infiltrated with blood, as to constitute, in many cases, a state of splenification. The heart, like the other muscles, is dark coloured and readily torn; coagula are frequently detected, especially in the left ventricle, which, in malignant cases, are very friable. The peritoneum has lost its smooth, silvery appearance, and has a dirty yellow colour. The mucous membrane of the œsophagus is often eroded, with the appearance, at its cardiac extremity, of a black matter, similar to that vomited, having oozed from its surface. Louis questions whether there is any connection between the burning sensation, experienced during life in the course of the œsophagus, and the erosion of its lining membrane, detected after death.

The stomach is usually distended with an inodorous gas, and contains a dark-coloured matter similar to that of the black vomit, more rarely, a pale viscid fluid, with dark-coloured flakes floating in it. The matter of the black vomit can, in some cases, be pressed out of small canals running beneath the villous coat. The vessels of the organ are usually gorged with blood, especially at the cardiac extremity, or its mucous membrane presents simply increased redness, of a rose hue, with streaks or spot of a purple colour in different directions along its inner surface. Abrasions and small depressions, as though a portion of the tissue had been removed, are often detected.

The congested state of the gastric vessels presents, not unfrequently, an appearance similar to that described by Seeds and others, as being met with in animals that have been strangulated, or criminals who have been executed. It may hence be inferred, that the injection of the vessels, in cases of yellow fever, is due to a loss of contractility, in consequence of which they are unable to resist the entrance of an undue amount of blood, or to empty themselves when distended. The mucous membrane of the stomach is often mamellonated, but there is seldom any indication of thickening, softening, ulceration, or gangrene. I have met with softening in only one case; and Louis detected a thickening of the membrane in only two cases. Hepatization and sphacelus are mentioned by the latter, but by no other pathologist that I am aware of.

The same remarks as have been made in reference to the morbid appearances in the stomach, may be repeated in regard to the duodenum. The small intestines generally present similar lesions; their mucous surface is usually covered with a dark-coloured viscid mucus, and presents numerous arborescences of a yellow hue. Intussusceptions would seem to be of common occurrence in yellow fever. Gilkrest remarks that no ulceration of the glands of Peyer has been detected as in "typhus and other fevers

mali moris." In cases, however, assuming a typhoid type, enlargement and softening of these bodies have been present.

In the large intestines, especially the colon, the mucous membrane is often coated with a dark pultaceous matter. A pale, red fluid, resembling blood, is sometimes met with in their cavity; contractions of their calibre are occasionally present. On removing the black pasty matter from the mucous membrane, its surface is often found smeared with a substance resembling linseed meal and water. Louis witnessed, in one case, a softening of the colon, which was covered with an adventitious membrane.

The condition of the liver, both internally and externally, is various. Its colour may be either pale, reddish, brown, olive, yellow, greenish, or it may have the appearance of rotten cork. In children it usually resembles, in colour, pale box-wood. It may be hard, or soft and friable, crumbling between the fingers. It is often engorged, and, in some cases, anemic. Louis considers the pale anemic condition of the liver pathognomonic of yellow fever. According to Dr. Stewardson, of Philadelphia, in bilious fever the liver has a bronzed appearance externally, and an olive tint internally, which never occurs in yellow fever. The gall-bladder contains, ordinarily, its usual quantity of bile; Louis, however, says that it contains less than in other acute diseases; it is sometimes thickened, its contents being orange-coloured, or tinged with blood. The mucous surface is frequently punctated and covered with a granular sediment from the bile. It has been known to contain, in some cases, a grumous, tar-like, or ink-coloured fluid. The biliary ducts, especially, according to the observations of Stevens, the cystic, are sometimes impervious.

The kidneys are, occasionally, of a yellow colour externally, their substance congested, with minute abscesses in the papillæ, and pus in the ureters. The urinary bladder is generally contracted, its coats being thickened and indurated, and its mucous surface covered with yellow mucus, and dotted with small points. A substance resembling black vomit has been found in its cavity.

In cases of yellow fever terminating rapidly in death, no lesions have been observed: Louis states that in eight out of twenty cases, he met with no lesions to account for the fatal termination.

In regard to the black vomit, which has been considered pathognomonic of yellow fever, Professor Dickson states that he has met with it in cases of gastritis, enteritis, and in catarrhal and bilious remittent fever, in one case of varioloid, in two of dropsy, and in pregnancy; and the late Dr. P. G. Prioleau, of Charleston, South Carolina, states that he has met with the ejection of a matter resembling the black vomit in pregnant women labouring under no disease, and in a youth after extreme fatigue. I have seen the same occurrence in the moment of death from phthisis pulmonalis. In yellow fever the black vomit generally occurs in the second stage of the disease, though occasionally in the first. I have known it to occur within

thirty hours of the attack, and have heard of it occurring still earlier. In regard to its nature, Dr. Rush supposed it to be vitiated bile. Fordyce considered it to be an exudation similar to that producing the incrustations upon the tongue, lips, and teeth, in malignant fevers. The majority of physicians, with Dr. Physick, believe it to be blood, altered in appearance from certain morbific causes. Professor Dickson doubts its being blood, from having never met with it in hæmatemesis. Dr. Rhees, in a drop of black vomit, examined by the solar microscope, discovered an immense congeries of animalculi. Dr. Jackson asserts that he has traced it from the gall-bladder to the stomach, when the pyloric orifice was contracted. Louis believes that it may be produced by other surfaces than that of the stomach, having met with it in the intestines. Dickson has seen it in the bronchi, and by others it has been met with in the urinary bladder.

The black vomit varies in appearance, being occasionally grayish brown, chocolate coloured, or blackish, in some being as black as the secretion from the cuttle-fish. It has been compared to coffee-grounds, the liquor of pickled walnuts, &c. When examined with the microscope, it looks like smoky mica, and has its colour and feel. According to Louis, the deeper the colour of the black vomit, the more abundantly it is secreted. Dr. J. C. Nott, (*Amer. Journ. of Medical Sciences*, April, 1845,) considers the black vomit to be the blood acted upon by an acid, and that in proportion to the excess of the acid or the blood, the colour will be darker or lighter. Dr. Nott states that the black vomit effervesced when the carbonate of potass or ammonia was added to it. In the experiments which I have made, no effervescence occurred in a single instance. Bancroft declares that the black vomit is perfectly insipid, which corresponds with my own experiments. In only one-sixth of the cases of yellow fever which fell under my notice, were there any indications of acidity of stomach.

The appearance of the artificial black vomit, formed according to the plan of Dr. Nott, differs materially from that ejected from the stomach. The latter has a flaky appearance, like smoky mica; the former more of the coffee-ground appearance.

To a small portion of black vomit about four times the quantity of sulphuric ether was added, and then shaken together in a vial; the matter of the vomit floated on the surface, having the appearance of a dark cobweb or flake of dead matter. A portion of artificial black vomit being treated in the same manner, it immediately sank to the bottom, and did not again rise to the surface. Treated with a solution of the nitrate of silver, the black vomit was changed to a cream-white colour, every dark speck being removed, while the artificial substance retained its colour, being precipitated to the bottom of the vessel. An argument against the hypothesis that black vomit is blood changed by the action of an acid, may be drawn from the case of Dr. Fletcher, Dr. Nott's own patient, who, he remarks, was ejecting black vomit from the stomach, and discharging *pure blood*

from the bowels at the same time. Now, how is it to be explained that the supposed acid secretions acted upon the blood in the stomach and not in the intestines? The black vomit is doubtless a morbid excretion from the vessels of the stomach and intestines, and in this sense may be described as the blood changed in its properties by the diseased condition of the vessels.

Causes.—It is unphilosophical to refer a disease which, like yellow fever, is epidemic only at particular seasons and in particular localities, to causes which are in operation every year, and in localities where the disease never occurs.

That yellow fever is not produced by the action of marsh miasmata, must be very evident, from the fact that it is unknown at Rio Janeiro, but endemic at Vera Cruz, both places being nearly parallel in latitude, both built on a low sea coast, skirted by high mountains; and the religion, habits, and manners of living of the inhabitants of both being the same. Still, at Rio Janeiro, though encompassed by extensive swamps, and the inhabitants constantly subject to attacks of intermittent and remittent fever, the yellow fever has never been observed; while at Vera Cruz it occurs almost every year. In Honduras, bordering on the sea, and alternately boggy during the rainy season, or parched up during the severe droughts so common in that country, yellow fever never prevails, while intermittents and remittents are of common occurrence. In Demarara, with its low and swampy soil, its ditches, its stagnant water, abounding with vegetable matter in a state of decomposition, the whole constituting a true hot-bed of pollution, the yellow fever is unknown. Where are we to look for the sources of paludal miasmata as the cause of yellow fever in Bulam, surrounded by the sea, on the peak of Medina Sidona, on the Rock of Gibraltar, or in the beautiful and apparently salubrious city of St. Pierre, Martinique? Carlotta, in Spain, a beautiful village, 1200 feet above the level of the sea, regularly built, well paved, and exceedingly cleanly, was nearly depopulated in 1800 by the yellow fever. Barcelonette, surrounded very nearly by the sea, and without any marshes in its immediate vicinity, was decimated in 1821 by this pestilence. We might also inquire why the yellow fever should not prevail in Calcutta, Milo, Algiers, and Constantinople, where everything would appear to be present necessary for its production, and yet commit such ravages in the well-regulated cities of Charleston, New Orleans, &c.?

Bilious remittent fever is met with alike in the swamps and rice fields of the Southern States, amid the fens of Lincolnshire, in Carthaginia, Savoy, amid the fertile plains of Lombardy, and in the island of Walcheren; but the yellow fever never prevails in any of these situations, a circumstance scarcely to be expected, if it depended for its origin upon the action of the same morbific causes.

It has been asserted that the prevalence of a high degree of atmospherical temperature is essential to the production of yellow fever, and a series

of meteorological tables has been adduced to show that the disease has not prevailed, excepting when the thermometer has ranged from 79° to 80° F. at 3 o'clock, P. M., and it has been supposed that the prevalence and malignancy of the disease are always in proportion to the degree of the prevailing heat beyond that just indicated.

Now, although the prevalence of a certain degree of heat is unquestionably necessary for the production of yellow fever, it is nevertheless true that the disease does not occur in situations and seasons marked by very high degrees of temperature. If heat alone were sufficient for the production of yellow fever, it is somewhat remarkable that it has never occurred in the city of Kingston, Canada, or in various parts of Russia, where the temperature of the summer is often beyond the degree supposed to favour its generation.

The supposition that the yellow fever is produced by a poison generated by the action of intense heat upon masses of vegetable or animal matter, in a state of putrescency, is equally untenable: all the circumstances supposed to be necessary for the generation of the poisonous effluvia, have been repeatedly present without the fever occurring; while, on the other hand, it has appeared and prevailed extensively, under circumstances where the materials for the production of this supposed poison could not possibly have had an existence.

The influence of an easterly wind has been much insisted upon, as a cause of this and other epidemics, and I believe with some show of reason. Johnson observed that the yellow fever was most prevalent, whenever the trade wind blew to some extent. These winds extend as far as 28° or 30° on each side of the equator, blowing from east to west; and on the coast of Asia and America, are sometimes felt as far as 40°. The yellow fever broke out in New York, in 1798, during an easterly wind. The epidemic at Gibraltar, in 1804, was by many referred to the same cause. The prevalence of easterly winds was observed by Barton during the prevalence of yellow fever at New Orleans in 1833, and by Kirkpatrick in Woodville, in 1844. I have observed the same thing during the epidemics of 1839, '42 and '43.

By a few writers, the yellow fever, in common with other epidemical diseases, has been referred to the existence of particular species of animalculæ, which exist in impure air, and by entering the circulation, give rise to disease. These animalculæ are supposed to be destroyed by pure air and water, and hence are found in the air of cities, but not in that of the country. But, if yellow fever were produced by animalculæ, why should not the acclimated be as liable to its attacks as the unacclimated, and why should children be less frequently attacked than adults, when we know that parasitic animals are more commonly met with in the first than in the last.

The peculiar condition of the air essential to the production of the yellow fever has not yet, and probably never will be, certainly ascertained.

Various causes, no doubt, tend, by producing a vitiation of the atmosphere, to augment the potency of the particular reigning epidemical constitution. But it is impossible by these alone to account for the occurrence of the various epidemics during particular years, and the confinement of many of them to particular districts or localities, or to explain the progress of the epidemic to its maximum intensity, and its more or less gradual decline and final cessation for a time. These circumstances, as well as the special character of each epidemical disease, must be due to some condition of the atmosphere, in addition to its state of impurity or intemperies; some specific morbific peculiarity appertaining to different sections of the globe, which, with the combined influence of heat, moisture, animal and vegetable putrefaction, electrical changes, the prevalence of particular winds, &c., develops, by its action upon the animal organism, local epidemics; the tetanus of Santa Cruz, the Barbadoes leg, the pellagra of Lombardy, the goitre of the Alps, &c. &c.

In looking over the map of the world, we see in countries north and south of the equator, but chiefly north, as far as 40°, three great regions of disease. First, of the plague; secondly, of the cholera; and, thirdly, of the yellow fever. If all the morbific circumstances were precisely the same in all of these regions, only one of the diseases named would probably prevail, but as there is a modification in these circumstances, there is also a variety in the character of the pestilence engendered.

Thus, from the equator to 20° north latitude, may be regarded as the true yellow fever region, embracing the West Indies, and the coast towns of Africa, the United States, Mexico, &c. From 20° to 30° in the eastern hemisphere, we find the valley of the Ganges, the principal centre of the cholera region, and from 30° to 40° we have the region of the plague.

The yellow fever being, therefore, endemic within the tropics, we can see no grounds for the belief that, when the fever makes its appearance in different portions of the same region, it is necessary that it should be exported from the one place to the other by the crews, cargoes, or foul air of ships.

It has been supposed that the plague, yellow fever, Asiatic cholera, and typhus fever are mere modifications in the character of one and the same disease, produced by the influence of the peculiar epidemic constitution of the atmosphere in different regions of the earth. In corroboration of this supposition, it is stated by Sydenham, that a disease similar to the plague occurred in London, and in 1771, a disease of a like character prevailed in Moscow in ——, where it destroyed 80,000 persons. Again, a fever similar tothe yellow fever has been observed in England and Ireland. Dr. Hamilton, of Lyn Regis, describes its appearance in Norfolk, and Graves in Dublin. The latter states that the symptoms and anatomical characters were the same as those laid down in cases of yellow fever by the best authorities. Sydenham describes the plague of London, in 1665, as having been ushered in by a malignant fever, which was nearly identical with typhus fever.

Dr. Armstrong states that a friend of his from the pest house at Constantinople, visited the fever hospital under his charge. He took him to the bed-side of a patient labouring under typhus fever, and asked him what he denominated the disease; he replied, the plague. I have myself met with at least a dozen cases of yellow fever in New Orleans, and Mobile, during the years 1833, '37, '39 and '43, that might with great propriety have been denominated cases of plague. They were marked by a low grade of fever, and attended with buboes, carbuncles, &c. The same thing was observed in New York, in 1798. Armstrong mentions a case of typhus in a female, attended with knotty glands, petechiæ, &c. Baron Larrey states his opinion that the plague and yellow fever are identical. Boot remarks that, the yellow fever, which is annually epidemic at Vera Cruz, becomes changed into typhus at Boston;—the two diseases occurring, the first in the south, and the second in the north, at the same seasons. He has seen the symptoms peculiar to each blended in the same patient.

If we examine closely the plague and yellow fever, we find a corresponding train of symptoms in both. The same anxiety at the præcordia; a similar expression of countenance; the shuddering; the pain of the epigastrium; the vomiting of dark fluids; hemorrhages; dark, bloody and offensive stools. We observe, also, that both have a predilection for towns on the sea-coast, and for similar conditions of soil, &c. We read of walking cases of the plague having occurred in the army of Napoleon. A similar parallel may be drawn between yellow fever and typhus fever.

Why the peculiar modifications of disease which we have supposed to be endemic in particular regions of the earth, should be occasionally met with beyond those regions, it is impossible to explain. It may be that, in consequence of the prevalence of certain winds, an unusual condition of the temperature and of the electric condition of the air, and perhaps of other changes connected with certain intestinal movements in the earth itself, the atmosphere of one region may undergo a modification approximating it, in its constitution and morbific influence, to that of another, and thus impressing upon the diseases occurring there the same character, as though they had originated in the latter. But everything in relation to this subject, in the present state of our knowledge, can be viewed only as a more or less plausible conjecture.

Nature of Yellow Fever.—By a reference to the account of the pathological changes observed after death, it will be perceived that upon them can be founded no positive evidence in proof of the dependence of the disease upon local inflammation. The increased vascularity and congestion of certain tissues, and the effusions which often exist, cannot with propriety be referred to as the products of inflammation. Stevens supposed that the poison producing the disease, causes a change in the condition of the blood, rendering it dark-coloured, and deficient in its saline ingredients, and making it to coagulate without a crust. These changes in the blood, when

present, I consider as rather the effect than the cause of the morbid actions set up in the body; they are not, however, invariably present; I have seen the blood coagulate as perfectly in yellow fever as in an ordinary intermittent.

With Gilkrest, I feel persuaded that it is upon the ganglionic and spinal system of nerves that the poison producing yellow fever primarily and mainly acts. This is evidenced by the morbidly augmented sensibility, the general malaise, acute pains, sudden prostration, &c., which often usher in the disease. The first effect of the morbid impression upon the nerves, is functional disorder of the several organs, which, if the cause be not removed, and the healthy action of the nerves restored by appropriate remedies, terminates finally in disease of the several tissues; the blood and other fluids of the body become changed, and a breaking up of the whole organism necessarily ensues.

Treatment.—The general indications of treatment are: 1st. To remove the febrile excitement, and thus prevent the supervention of local congestion and of lesions of the structures and fluids of the body. 2d. To guard against the occurrence of collapse; and, 3d, when the febrile excitement is reduced, to maintain the powers of the system. To fulfil the first indication, venesection has been strongly advocated by some physicians of very great eminence, and as strongly condemned by others of equal authority. Upon the whole, however, the weight of evidence is decidedly in opposition to the use of the lancet. That it may have been found beneficial in particular epidemics, is very probable, but I question very much whether, under any circumstances, the abstraction of blood will be found beneficial after the very first stage of the disease has passed.

Cold affusion, as directed by Professor Dickson, that is, immediately upon the termination of the chill, if there be one, when the face becomes flushed, and the surface preternaturally hot and dry, I have found, in the few instances in which I have tried it, to produce a beneficial impression. Whenever there is chilliness, dyspnœa, or diarrhœa present, the cold affusion is inadmissible. Cold applications to the head give much relief from pain, and are often otherwise useful. They are to be employed under the same circumstances as the cold affusion.

A remedy more generally applicable, even in the second stage of the disease, and attended always with less risk, is the warm or tepid bath. The patient should be allowed to remain in the bath from ten to fifteen minutes, during which time friction should be made to his body and extremities. (The Creoles use split lemons for this purpose.) Upon being taken from the bath, the patient should be quickly enveloped in a warm blanket, and put to bed. I have generally repeated the warm bath daily, so long as the strength lasts.

The exhibition of cathartic remedies is generally approved of; but to prove advantageous, they should be resorted to without the least delay. I

prefer as a cathartic, a combination of calomel and compound extract of jalap and colocynth, given in pills. If by these the bowels are not speedily relieved, injections are to be resorted to.

The Dover's powder has often the effect of moderating the heat of the surface, allaying nervous irritability, and inducing sleep.

Mercury, early administered, and in doses calculated to produce as speedily as possible, its specific effects upon the system, has been viewed by many distinguished physicians as a remedy, calculated, in the majority of cases, to arrest the fatal tendency. We believe that no other remedy has an equal influence over the disease, never having known a single case in which death has occurred after salivation was established.

There is, however, as Mr. Linton remarks, a condition of the gums produced under the influence of mercury, which is often confounded with ptyalism: the peculiar mercurial fetor is perceived, the gums become spongy and tumefied, the tongue clammy, and, as I have witnessed, ulcers form upon its dorsum, as well as upon the gums; and yet, what is properly termed salivation, does not exist. It is a question whether the condition of the gums just described, results from the action of the mercury alone, or is not rather a consequence of a morbid condition of the buccal membrane, consequent upon the disease. The latter I believe to be the most probable conclusion. Under the circumstances referred to, the remedy should be suspended, and stimulants, nutritive diet and frictions at once resorted to.

I rarely continue the use of the mercury to the extent of producing ptyalism. In the majority of the cases that fell under my care during the epidemics of 1839, '42, '43 and '44, I administered the remedy in such doses as were calculated to unload the vessels of the liver and alimentary canal, and found that all its beneficial effects were evidenced, when it produced a discharge from the bowels, of green, glairy, curdled, or jelly-like stools; convalescence soon ensuing, even when the specific effects of the mercury were not evinced in its action on the gums. I proportion the doses so as to produce free bilious evacuations. So soon as this result is effected, the tongue will, in general, become moist, the febrile heat less intense, and more equally diffused; the skin softer, and of a more healthy colour. When these indications of a solution of the disease are observed, the remedy should be discontinued.

I am accustomed to combine each dose of the calomel with a minute proportion of opium, or two or three grains of Dover's powder, to prevent its running off by the bowels. Should it purge too actively, without producing dark bilious evacuations, the amount of the opium should be increased, or the cretaceous mixture, with the addition of laudanum, administered.

After the bowels have been fully evacuated at the onset of the disease, I prefer that they should remain in a somewhat inactive condition, than incur the danger, by a continuance of purgatives, of inducing frequent watery stools, which are peculiarly unfavourable in yellow fever, often producing rapid and alarming prostration.

When dark, bilious, somewhat consistent evacuations have been procured, and a general amelioration of the symptoms ensues, I trust the case to the effects of the usual febrifuge medicines, the neutral mixture, &c. But, when the stools continue light, clay-coloured, or like cream, and the general symptoms are intense, indicating imminent danger, the safety of the patient can be secured only by pursuing the untrammelled course of Chisholm. In these cases the internal and external use of mercury should be resorted to, so as to produce as quickly as possible its specific effects upon the system.

With respect to the acetate of lead, so favourably spoken of as a remedy in yellow fever by Dr. M. Irvine, of Charleston, S. C., as well as by Dr. O'Halloran and others, my experience has been limited. I have generally employed it to arrest the hemorrhages which so often prove troublesome in the disease, and under such circumstances have been much pleased with its effects. The nitrate of silver, recommended by Professor Dickson, I have also found to be a valuable remedy in cases attended with hemorrhage, in the dose of one-eighth to one-third of a grain by the mouth, or in solution as an enema.

Blisters applied to the epigastrium in the early stages of the disease, will very generally produce a beneficial impression upon the symptoms. A blister along the spine, as recommended by Mr. Liston, will often relieve the irritability of the stomach, as well as the acute pains and jactitation which form such prominent and troublesome symptoms in this disease, and induce a calm refreshing sleep. Camphor blisters have been highly recommended, and are worth a trial.

The employment of blisters should be confined to the early stages of the attack. The practice of covering the body with blisters in the latter stages of the disease, with the view of exciting the action of the capillaries, is, according to my experience, one very seldom attended with success.

The irritability of the stomach is a most distressing symptom, and often prevents anything whatever from being given by the mouth. It is all important to allay it if it be in our power. The remedy which I have found superior to all others is the bicarbonate of potassa in solution; in some cases the solution of camphor in ether will be found very promptly to calm the irritable state of the stomach. The patient should be prohibited from taking anything in the form of drink; his burning thirst being allayed by portions of ice held in the mouth. If the irritability of the stomach be attended, as is often the case, with a constipated state of the bowels, a dose of castor oil or of croton oil may be administered, and will be found to produce less irritation and exhaustion than the mildest laxative we can administer. Saline cathartics are always to be avoided, after the first stage, from their tendency to produce thin, red, muddy stools, quickly followed by a tender and tympanitic condition of the abdomen, and irritation of the brain.

The supra-orbital pain is often very intense; for its relief cups to the nape of the neck, and leeches to the temples are frequently of no avail; more benefit will, in general, be derived from sinapised pediluvia with frictions to the lower extremities. The ice cap, or cold water to the vertex, may be employed at the same time; these means failing, a blister should be applied along the spine.

To prevent the collapse which ordinarily occurs, in severe cases, about the period of the second stadium, stimulants will be required. Great judgment is, however, demanded in deciding the proper period when they should be resorted to, as well as the extent to which they should be carried. When there are no indications of cerebral congestion, as a tendency to stupor, restless delirium, a hot dry skin, flushed face, deep suffusion of the eyes, red tongue, &c., I prefer, as a stimulant, under the circumstances referred to, opium, or some one of its preparations; it is particularly adapted to cases occurring in intemperate livers, which are marked often with symptoms of delirium tremens; here large doses of the opium will be demanded. One of the great advantages resulting from the use of opium at the period when indications of an approaching collapse occur, is the state of calm refreshing repose, which it has a tendency to produce, and which, when it occurs, results often in a state of hopeful convalescence.

From alcoholic stimulants, injudiciously administered, much injury frequently results. Their use demands the utmost judgment and caution.

In the congestive form of yellow fever, the safety of the patient will depend upon the promptness with which an energetic treatment is resorted to. Here, at the very onset of the attack, hot sinapised pediluvia, frictions to the surface, sinapisms to the extremities, epigastrium and spine, followed by bags of hot sand, and stimulating enemata, should be resorted to.

By many eminent practitioners, the sulphate of quinia in doses of from twenty to sixty or eighty grains, administered in the very commencement of the attack, no matter how high the febrile excitement may be, and when rejected by the stomach in the form of enemata, has been recommended as one of the most efficient means of controlling the more malignant forms of yellow fever. My own experience is not, however, in favour of the practice referred to. I have employed the sulphate of quinia in every stage of the disease, and in sufficiently large doses, but with very doubtful advantage excepting during the apyrexia, and in cases uncomplicated with any local determination. When injudiciously administered, it appeared to me to hasten the occurrence of the black vomit.

The various remedies that have been proposed as means of arresting the black vomit, as charcoal, chloride of sodium, tannin, creasote, tincture of cantharides, &c., I have found to be entirely inefficacious; and now never administer them unless to gratify the anxious desire of the friends of the patient, that something might be done to relieve an alarming symptom.

Mobile, Ala.

ART. VII.—*Researches upon the Structure and Functions of the Ciliary Processes.* By R. FRASER MICHEL, M.D., Charleston, S. Carolina.

WHILE among the litigated points of anatomy and physiology, there are many questions rendered particularly intricate from the numerous bearings which they present, there are others which require but the scrutiny of an anatomical eye to lead us almost naturally to the physiological inductions which appear to follow as the sequel. This is, perhaps, the nature of the examination into which we are about to enter.

While studying absorption, and believing from the concurrent testimony of several physiologists, and the plausibility of their researches, that the venous system plays a prominent part in the discharge of this important function, the eye presented itself to me, as an organ said to be totally deprived of lymphatics, and which seemed to furnish an example confirmatory of this assertion. The question arose, whether the eye really possessed any peculiar vascular arrangement which distinguished it in this respect from any other organ, as it was deprived of lymphatics for the accomplishment of absorption. A careful anatomical examination was instituted, by which I purposed to determine the relations which exist between the constituent parts of that organ, and their peculiarities of structure.

In undertaking this subject, and making references to those works which were inservient to my purpose, I found that I had engaged in a vast field already explored by those whose names are destined long to reign with oracular authority over anatomical questions. Indeed, the names of *Sœmmering*, *Linn*, *Arnold*, and others, appeared to preclude the possibility of my determining anything positive with regard to this problem. But as from every subject, truth may be said to radiate like the beams of light in various directions, the hope has been encouraged, that it is given to every one to view it in some one of those numerous phases which may possibly have escaped the scrutiny of the imposing authorities whose names have been mentioned above.

Proceeding, then, without further preliminaries, to the discussion of a subject no less intricate than interesting, we will, for the facilities of description, and the more orderly exposition of the facts which support our views, comprise, what we have to say, under two sections: examining under the first head such parts of the eye, the complexity of whose structures fails not to attract our serious attention; and under the second, making such physiological inferences from the structure of these respective membranes, as may elucidate the functions they discharge.

As our remarks will therefore particularly bear upon the function of absorption, and the nutritive acts, as they are performed in the eye, attention will be almost solely directed to the *choroid coat* and its appendages,

the *iris* and *ciliary processes*, while the hyaloid membrane and body will also engage our time so far as they may be connected with the vascular arrangement of the organ.

After my first examination of an eye, prior to my attention being especially engrossed by this subject, I found that my impressions concerning the choroid coat were by far the most striking. I was no less impressed with that peculiar deposit—than which there is nothing more singular in the whole economy—investing the entire membrane, than that there should be so large a reticulum of blood-vessels in so small a space. Indeed, the vascularity of this coat is such, that the learned Prof. Cruveilhier justly remarks, that the words *choroid* and *vascular* are synonymous.

Of the general direction and relation of this vascular layer it is needless to speak, as this would be but reproducing what every elementary work on anatomy contains; but of its anterior termination and structure, concerning which there is such diversity of opinion, we will furnish some account.

Since the days of the celebrated injector Ruysch, the choroid has been regarded as composed of three distinct layers, which are readily exhibited when recourse is had to the proper modes of preparation. The outer layer, which is manifest to the unassisted eye on a choroid coat that has macerated a while, is formed of a multitude of blood-vessels held together by cellular tissue, and when examined with the lens, present a tortuous direction, running into centres whence radiate a number of convoluted capillaries. From the multiplied centres, the rendezvous of these arborescent ramifications, the vessels which are altogether composed of veins, have been called venæ vorticosæ, and contrast very strikingly with those of the layer beneath, which is made beautifully conspicuous when both are injected; the lamina immediately beneath is arterial, its vessels coursing lengthways towards the anterior part of the eye. This is the layer which was first so beautifully injected by Ruysch, and has since borne his name, *tunica Ruyschiana*. This part, when well injected, gives to the choroid coat the appearance of a sheet of gold; very excellent representations of this are given in Zinn,* and Sœmmering.† The next lamina which forms the inner part of the coat in contact with the retina, is not readily exhibited in the human eye, though in the sheep it is always easily demonstrated. This is the *membrana pigmenti*. After maceration, a separation of this portion is most easily effected by commencing at the tapetum lucidum, where the layer possesses the greatest thickness. Conveyed beneath the microscope, it presents the beautiful appearance of a hexagonal tesselated pavement; each hexagon being a cell in which the granules of pigmentum are secreted, that portion of its extent forming the tapetum being void of pigment globules, though the cells exist.

* Descriptio Anatomica Oculi Humani, Fab. iv. Figs. 1 et 2.

† Icones Oculi Humani; Explicatio Fabulæ quintæ, Figura septima.

Now after this cursory view of the several constituent parts of the choroid, let us examine the mode of their termination at the anterior part of the eye. Indeed, this is the question which it behoves us to examine, and its careful consideration will form the principal object of the present remarks.

The generally received opinion is that there is a mutual reception of the ciliary processes, iris, and ciliary ligament, and in such a manner we are told, as to allow of a ready separation of the iris from the rest of the choroid, upon a knowledge of which assertion, rests one of the operations for artificial pupil. But the exact mode of termination of these several structures, nay, even their exact nature, is by no means settled.

A signal illustration of the diversity of opinion on this subject may be found by perusing a work recently published by a distinguished physiologist of Germany, Rudolph Wagner, who, in speaking of the *ciliary processes*, calls them *muscular*, an opinion now professed by few, and which is certainly in formal contradiction with the result of my observations, as far as they have extended among several classes of animals, the sheep, ox, dog, cat, and in the human species.

Whatever be the mode of union of the *iris* and *choroid*, one fact may be easily established, which is, that the adhesions between the two are far more intimate than is generally believed. To convince one's self of this fact, we need but observe, in dissecting an eye, that the *choroid* and *iris* continue still to protect the humours after the removal of the sclerotica and cornea,—there is only a slight adhesion of the iris and choroid with the sclerotica. This connection appears to me to be of a ligamentous character, particularly in the eye of the bird, and in the sheep, where the anterior layer of the iris, which is clearly muscular, seems to give off a multitude of tendinous slips attached directly to the choroid, under the form of a circular white line, improperly called "*annulus gangliformis, seu ganglion annulare*," by Sœmmering.* This is no ganglion, but a ligamentous tissue, deserving the appellation which it often bears of ciliary ligament, as it unites the muscular, or anterior layer of the iris with the choroid, just as the posterior layer, which I consider as altogether vascular, is directly continuous with that tunic. The pulpy appearance which the ciliary ligament may sometimes assume, is apparently due to the rupture of its slight attachments with the sclerotica, for this circumstance leaves a somewhat similar appearance upon the corresponding part of the sclerotica.

Such, then, is the nature of the ciliary ligament: a band of union between the muscular, or anterior layer of the iris and the choroid, adhering slightly to the sclerotica, but firmly to the choroid, from which it is torn, but does not naturally separate, in operating for artificial pupil. But the posterior layer of the iris is a direct continuation of the choroid, and there-

* Icones Oculi Humani; Explicatio Tabulæ quintæ, Figura septima.

fore essentially vascular; the blood-vessels of the latter running forward and downward, passing over and concealing the interior surface of the ciliary ligament, for which reason this structure is much less visible on the inner than outer surface.

This direct continuity of the framework of the iris with the choroid, explains the constant integrity of the two membranes after removal of the sclerotica, as they literally are one and the same. This direct continuation of the blood-vessels into the iris, is particularly visible in injecting the eye of a fœtus whose pupillary membrane still exists, as may be seen in the plates accompanying Jules Cloquet's monograph on this subject.* However, I may here observe, and would call particular attention to the remark, that all the blood-vessels do not pass into the iris. Of this I have had repeated opportunities of satisfying myself by injecting the arteries of the choroid tunic.

The ciliary processes, the nature of whose structure has been so variously interpreted, is positively vascular, and present so singular an arrangement of its vessels, that my surprise is great in observing the uncertainty of most authors on this subject. It is true that their nature, and the office they probably fulfil, were anticipated by ancient writers; but of this we have nothing but the most hypothetical accounts.

The first experiments which were performed on this subject, were by Ribes, in a series of essays published in 1814 and 1816;† and here I must acknowledge great assistance from the writings of this accurate and laborious investigator, many of whose researches I am proud to have been able to verify, as I am now more than ever convinced, they carry with them the stamp of truth.

Some of the many views entertained with reference to the function of the ciliary processes, were first, that they were destined to move the iris, or to fix the crystalline lens, over which they exerted that influence which allowed the eye to adapt itself to various distances. It was believed again, that they secreted the black pigment which invests the choroid and posterior face of the iris. It is needless to confute these assertions, for the muscularity of the iris, the membrana pigmenti, and the separation of the ciliary processes from the crystalline lens, are overwhelming arguments to the contrary. Moreover, as observed above, these remarkable structures are altogether vascular, the blood-vessels of the choroid coat extending directly into them in the most visible manner, and presenting one of the most beautiful appearances that can be exhibited from injections of any other part of the body. When, indeed, a ciliary process has been divested of that inspissated pigment in which it is disguised, and, placed on a lamina of glass,

* Mémoire sur la Membrane Pupillaire, et sur la Formation du Petit Cercle Artériel de l'Iris. Par Jules Cloquet.

† Mémoires de la Société Médicale d' Emulation.

is conveyed beneath the field of the microscope, we may distinctly discover the presence of a hollow canal, which, when it reaches the free extremity of the ciliary processes, affects a recurrent direction, coursing backwards parallel to the first, so as to form a perfect loop. Eccentric to this loop, there is a fringed arrangement of cellular tissue, which, indeed, may be distinctly seen with the naked eye. Now after a successful injection of coloured ichthyocolla through the common or internal carotid, it will be found that the canal in the ciliary process is an artery derived from the arterial layer of the choroid coat. Again, if we inject by the jugular vein, (which is much less apt to succeed, owing to the fragility of the veins in the choroid,) the injection passes into the fringes of the ciliary processes. The vascularity, then, of these appendages to the choroid is evident.

Before we proceed to the inferences deduced from this fact, let me further remark that on no occasion have I found that the substances used in injections pass into the hyaloid membrane of the vitreous body. I have never consequently seen the hyaloid artery described by Cloquet and others, as passing through this humour to the posterior part of the lens, through the arteria centralis retinæ, easily and fully injected. In these respects do I fully concur with Ribes, who was no more successful in injecting the hyaloid membrane. It is true that, according to Hanover, the *canalis hyaloideus* is pervious only in new-born children, as he never could succeed in injecting it in adults. This would only explain the reason for Ribes' ill success as well as my own, but would in no wise interfere with the conclusions I am to draw, as the consequent obliteration of the vessels of the corpus vitreum is admitted.

Besides these ciliary processes described as dependencies of the choroid coat, there are a distinct series of similar structures connected, as I believe them to be, with the retina; though their presence has been denied by many authors, they are described by others under the improper name of ciliary processes of the vitreous body. They are by no means the depressions of the *Zonula Zinni*, which give that fluted appearance to the canal of Petit, which has led anatomists to term this part of the eye the *canal godronné*. With a good lens in a favourable light, the fringes of these ciliary processes may be distinctly seen, and they are also susceptible of being injected, though I am not prepared to determine whether the injection passes into them through the central artery of the retina, or from any immediate connection which may exist between them and the ciliary processes of the choroid coat. Indeed, there is a mutual reception between the processes of the choroid coat, and those of the vitreous body. It is evidently from this juxtaposition, that the latter became also invested with the pigment, and a communication between these two sets of processes seems very probable.

If I have supposed the processes of the vitreous body to be connected with the retina, it is from their attachment to the zonula zinni, which I re-

gard as a continuation of the arterial or internal layer of the retina. Many of my dissections justify this belief, and some microscopists have followed the nervous pulpy filaments of the retina along this part to the peripheral portion of the crystalline lens. I am inclined to suppose that it is through the zonula zinnii that the capsule of the crystalline lens receives blood-vessels, and that these are derived from the retina, as there has often been an appearance of vascularity about the lens, without any traces of it in the vitreous body.

I am sorry that, while in accordance with Ribes, as regards the non-vascularity of the hyaloid membrane and vitreous body, I find that my observations must be placed in opposition with those of Cloquet and Müller. The latter particularly describes the hyaloid artery as passing through the vitreous body, furnishing to its membrane reaching the posterior capsule of the lens, upon which it is spent. He further mentions a fœtal structure, discovered by himself, under the name of *capsulo-pupillary membrane*, which also receives its blood-vessels from the artery.

Notwithstanding these authorities, I must continue in my belief that the humours of the eye are altogether transparent, being deprived of blood-vessels, which otherwise would intercept the rays of light, or at least materially interfere with vision. Regarding, then, the humours of the eye as completely isolated from the rest of that organ, being enveloped by their proper membranes, which, preserving the character of true serous membranes, are remarkable for their extreme tenuity and non-vascularity, the question arises: in what manner are secretion, nutrition and absorption effected?

Before replying to this question, let us observe that it is not very long ago since the function of absorption, supposed to be the sole prerogative of the lymphatic system, was disputed for by another order of vessels, whose important office was made known to us by the valued experiments of Magendie. This distinguished physiologist proved by a series of experiments, which we cannot here detail, that the veins positively absorb. Again he was conclusive in the further result that, during this process, the veins manifested a peculiar predilection for liquids, which were taken up with the greatest rapidity.

Now, taking the anatomical condition of the eye as the basis of a reply to the above question, and pointing out its alliance to the physiological fact just mentioned, we will at once discover a singular parallel between the office of the choroid coat, and that of the chorion enveloping the fœtus. Indeed, like this latter, the choroid is alone inservient to all the nutritive and secretory processes transpiring in the parts which it envelops, and this might almost be inferred from its extreme vascularity, and the peculiar distribution of its vessels, in those several appendages termed ciliary processes. These remarkable structures are organs of secretion. This will be readily understood, from what has been said of the central arterial loop, and the

venous fringes, which together form a ciliary process; for what would be the object of this extraordinary arrangement, were it not to realize some such important office in the vital operations of this perfect organ.

We can certainly imagine that the blood passing through these processes, is subjected to an operation, allowing the secretion of that aqueous fluid, which, by penetrating into the cells of the hyaloid membrane, will constitute the vitreous humour. Moreover, from the evident connection of the processes of the vitreous body with, and their penetration into the capsule of the lens, (a fact verified by Ribes,) we may readily admit a similar operation as going on in this place, which would explain the possibility of capsular cataract, while the lens itself is perfectly transparent.

Now, after the secretion of these humours, (perhaps even the aqueous also,) the fringed extremities of the processes being venous, will carry on absorption of the stagnant, or vitiated products as follows: the cellulo-vascular fringes of the processes of the vitreous body will pump up the vitreous humour, while, from the connection of these processes with those of the choroid, the former will receive in their turn the nutritive elements for the restorative process of secretion. The processes of the choroid, from their pendent condition in the posterior chamber, are admirably adapted for the absorption of the aqueous humour also.

Such, then, is the nature of the facts, which, though they might be dwelt upon more discursively, are sufficient, we deem, to prove that structures so vascular, were unquestionably destined to fulfil the high office which we have assigned them.

[While we have cheerfully complied with the request of the talented young author of the above paper, by giving insertion to his interesting researches, we must express our inability to yield our convictions to the correctness of the deductions he has drawn from them. The far greater rapidity with which absorption takes place in the anterior than in the posterior chamber, appears to us to be fatal to the hypothesis, that the ciliary processes are destined for the function of absorption.

Those who are interested in the minute anatomy of the eye, will find a most admirable account of it in Todd and Bowman's Physiological Anatomy, now in the course of publication. See *Med. News and Library, for Sept. and Oct.* 1847.—Editor.]

ART. VIII.—*Case of Partial Occlusion of the Os Uteri, during the third difficult labour of the Patient. Incision of the Os Uteri.* Read before the Boston Society for Medical Observation, October 19th, 1846. By CHARLES E. BUCKINGHAM, M. D.

MRS. R. F., was taken with labour pains, early in the morning of Sept. 21, 1846. She is a large woman, and somewhat fleshy; fair skin, light hair, blue eyes. Her first child was still-born, after a tedious labour, about three years since. Her second child, a female, whom I saved by artificial respiration, at birth, weighing nine pounds and six ounces, was born on the 21st of Feb., 1845, after a severe and protracted labour, followed by profuse hemorrhage, which was checked by ergot, and the application of cold douches, &c.

In this, her third labour, I was called at half-past-five o'clock, A. M. Found her in severe pain. A physician, who was present on my arrival, declared everything favourable in the case, and that the child would soon be born. The membranes broke about four o'clock, being the first symptom of labour. The pains were so severe as to prevent satisfactory auscultation. The fœtal head presented, with the occiput to the pubes; the left parietal protuberance being towards the os uteri. The os uteri was quite near the vulva, about the size of a dollar, with thin edges, perfectly unyielding, and feeling to the finger as if formed by a wire. At the right anterior part, there appeared to be a cicatrix, extending upwards and outwards. The vagina was perfectly moist and distensible. The fœtal head, I managed to push back during an interval between the pains, and, without success, tried to bring it into a more favourable position. Somewhat troubled by the state of the soft parts, against which the head did not as yet press, at a quarter of six o'clock I gave a grain of tartrate of antimony, and repeated it twice, at intervals of fifteen minutes. Its only effect was nausea. The patient had already flowed excessively. The head advanced slowly, the pains being very forcing, until six o'clock and eighteen minutes, when the head passed through the outlet, bringing before it the anterior part of the uterus, and resting upon the distended vulva. The perineum was stretched to the utmost; the pains continued forcibly; the os uteri was still unyielding, and the woman cried out,—"it has come out into me; I shall surely burst." Ample opportunity offered for an ocular examination of the parts, and one of these terminations seemed inevitable:

1st. Rupture of the uterus into the peritoneal cavity. 2d. The passage of the fœtus through the perineum and rectum. 3d. Separation of the walls of the os and cervix uteri. Evidently no time was to be lost in sending for assistance. The question was, shall I wait for the head to tear its way through the natural passage, running the chance of its going in another direction, or shall I help it through with the knife? The nurse had left the room for a moment. I did not wish to call to her for my pocket case, nor could I leave the patient. Taking advantage of her temporary absence, for any disturbance might be injurious to the patient, and pressing the head back as much as possible during violent pains, I slid the blade of a lancet sideways within the os uteri, and slightly turning it, incised the posterior part to the depth of about one-eighth of an inch. The wound instantly enlarged of itself, and at two minutes after seven o'clock, the child was in the world. The cord was twisted twice about its neck,

and round between the thighs. There was some little difficulty in exciting the respiratory act. The placenta was soon afterwards born, and the uterus contracted firmly. The child, a male, was twenty and a quarter inches in length. The weight could not be determined. Pulse of mother at half-past seven o'clock, 80; no flowing. ℞.—Tinct. opii ʒij; syr. papaverum ʒij. M. Take ʒj every half hour, p. r. n.

7 *P. M.* Has taken ʒij of the mixture; no after pains; no flowing of any importance. Has not urinated; no evidence of water in the bladder. Pulse 84, full and soft.

22*d*. Pulse 66, full and soft. Has passed half a pint of urine. Lochia natural. No pains, nor tenderness; uterus well contracted.

23*d*. Pulse 72, full and soft. No defecation. Passes water freely. No pain anywhere. Uterus well contracted and without uncommon tenderness. Liquid diet. Set up last night contrary to directions. ℞.—Ol. ricini ʒss.

25*th*. 10 *A. M.* Pulse 80, urine free; lochia nearly ceased. Much pain in abdomen, following course of colon, which could be traced from cœcum down to descending colon, full of lumps and hard. Uterus rises more than half way to umbilicus; soft but slightly tender. Has not followed directions; has eaten freely of toasted bread; did not take the oil until seven o'clock this A. M., when she got ʒj. Has some nausea, probably caused by oil. (?) If she has no dejection before twelve o'clock, M., ℞.—Ext. colocynth. comp., hydrarg. submuriat., āā gr. vj. M. Two pills.

26*th*. 10 *A. M.* Oil operated thrice. Brought away much hardened fæces. At 4 P. M. yesterday, had a severe chill followed by fever, and great tenderness of abdomen, with nausea. Did not take the pills. Now tongue coated, white, not thick. Nausea; abdomen soft; no tympanitis. Took at nine A. M. ʒj of the mixture of the 21st with some relief. Colon not yet empty (useless to order an enema). Pain seems to be between umbilicus and uterus, more to the left, and apparently in small intestine. Pulse 108, not full, nor feeble. ℞.—Hydrarg. submur. gr. vj; pulv. opii gr. ĩss; ft. pil. No. vj. Take one, horis 6.

27*th*. Pulse 91; urine not so free as it has been; bladder empty; tongue not much coated; had some appetite, this A. M. Reports that she has taken nothing but gruel (?). Bad taste in mouth; slept well last night; complains that some tumour appears externally from the vulva; none discoverable; vagina hot; lochia have not ceased, and quite red; uterus quite large, and extending nearly to umbilicus; quite tender (and firmer than on the reverse) on left superior part of fundus. No tenderness in the course of the colon, which still contains fæces. Pain felt on the left side if pressure be made on the right side of uterus. No soreness about part incised on the 21st. No dejection since 25th. Has taken four of yesterday's pills. No nausea since. Omit pills till to-morrow. ℞.—Pil. colocynth. comp. ℈j; ft. pil. No. iv. Take two, and repeat p. r. n. in six hours.

28*th*. Pulse 84; urine more free; tongue cleaner; no nausea; bad taste continues. Tenderness continues, though less. Size of uterus slightly diminished; five dejections from four pills. Colon probably empty. May have gruel. Take the two pills of the 26th, with two hours' interval.

30*th*. 3½ *P. M.* Both pills were taken. Was easier on the afternoon and evening of the 28th, but passed no urine. During night had pain in region of bladder, but could not micturate. Had a chill at 4 A. M. yesterday, and was with difficulty relieved. In the morning, the milk had receded. The women report delirium (?) in consequence of which a priest

was called, who administered extreme unction, declared her almost dead, and in a fit of lucky stupidity advised an enema; half pint of oatmeal gruel was administered, which brought away fæces and probably some urine, with relief of pain. She slept from 12½ to 4¼ o'clock this A. M. The priest called to-day, to see if she were dead. Now, she is in a perspiration. Pulse 96; tongue cleaner than it has been; gums slightly tender; abdomen quite tender; bladder rises high above pubes. Drew off a quart of dark-coloured urine by catheter. Uterine tumour less firm than it has been. She shrinks from pressure, perhaps from fear of pain, which has left the lower abdomen, since the passage of the catheter. The milk is returning this P. M. ℞.—Enema limp. this P. M., and again in the morning. ℞.—Ext. belladonnæ ʒj; unguent. stramonii ʒj. M. Apply to the urethra p. r. n. Flaxseed tea, and rice water *ad lib.*

October 1*st.* Has had three enemata since my last visit, each of which brought away fæcal matter and urine. Did not sleep soundly. Constant pain in the loins, and headache. Still complains of prolapsed uterus, which does not exist, nor is there any tumour about the vagina. Lochia not tinged with blood. Bladder not empty. Catheter drew off two-thirds of a pint of high-coloured urine. Pulse 82; tongue slightly coated; milk has returned. Uterine tumour has subsided one-third; still painful to the touch on the left of the fundus; abdomen soft. Continue enemata, flaxseed and ointment. Soreness of gums abating.

2*d*, 10 *A. M.* Pulse 84; tongue cleaner; gums very slightly sore; no pain; slight tenderness of the left of fundus uteri; slept well; has passed no urine (?). Catheter drew off ʒij. ℞.—Spir. eth. nitrici gtt. xxx horis 4. Broth and toast.

3*d.* 11 *A. M.* Pulse 88; moderately full and soft; tongue moderately clean. Slept well last night; uterus still tender, but much diminished in size. Had at 8 A. M. a chill, probably from rising from bed. Relieved by warm drinks. Catheter drew off ʒxij of urine, not so dark-coloured as it has been. Continue medicine every three hours. Diet the same.

4*th.* Pulse 80, tongue clean; uterus slightly tender, but not larger than one's fist. Passes her water, but with difficulty. Catheter drew off ʒxij. Diet same.

From this time the catheter was not used. She grew slowly better, and was discharged comfortably well, on the 13th of October.

ART. IX.—*Radical Cure of Hernia by including the Neck of the Sac and External Ring in a Lead Ligature.* By J. C. NOTT, M. D., of Mobile, Ala.

THE subject of this case, aged about 50, was a negro man, under the professional care of Dr. Hicklin, of Mobile, of slender frame and delicate constitution. He had, for many years, been troubled with a scrotal hernia on the right side, and this malady had, of late years, been complicated with considerable enlargement of the testicle of the same side.

Dr. Hicklin requested me to see the patient in consultation, and, after a careful examination, I had no hesitation in concurring with him in the pro-

priety of extirpating the testicle, and suggested that the operation should be extended with the view of effecting, at the same time, a radical cure of the hernia. The doctor not only consented, but was kind enough, as the method proposed for the cure of the hernia was a novel one, to allow me to execute this part of the operation myself. No notes were kept by Dr. H., who had the subsequent management of the case; but the points to be elucidated are so simple as to require little detail.

The patient was operated on the 2d March last. Dr. Hicklin made an incision through the integuments extending from the external ring to the lower part of the scrotum; the spermatic artery was laid bare and tied; the cord divided and the testicle taken out in the usual way.

I then took charge of the remaining part of the operation. I extended the incision a little farther up, so as to lay bare more fully the external ring, which was cleared of cellular tissue. The hernial sac had already been opened, and a considerable portion removed with the testicle, to which it was adherent. I then passed a lead wire through the internal column of the ring, two or three lines from its margin and about four above the pubis, continued it down under the neck of the sac between the latter and the pubis, and brought it out through the external column at a point opposite to the perforation in the other column, the object being so to place it, as, when tied, the effect should be to draw together the two columns of the ring, and, at the same time, to compress the neck of the sac. A single knot was made, and with a pair of forceps the wire was twisted as tightly as so weak a material would permit. The opening was large enough to allow three fingers to pass into the abdomen, and I did not succeed in reducing it more than one-half. As the operation was a new one, and my preparations were made in haste, I could not do better than to stop here, close the wound, and trust to the subsequent inflammation and deposition of lymph which I expected to form around the ligature. The integuments were brought together with interrupted sutures, dressings applied in the usual way, and I hoped a speedy union would ensue.

Secondary hemorrhage, however, occurred in the night; the patient, who was not in condition to bear it, lost a great deal of blood. It was necessary to remove the dressings, open the scrotum, which was distended with blood, and although the hemorrhage did not appear to come from the cord, it was deemed safest (being in the night) to inclose it in a ligature; the hemorrhage seemed to come from the veins of the scrotum, and was relieved by cutting the ligatures—the wound was, therefore, dressed with lint and left to suppurate.

As might have been expected, the wound suppurated very profusely, assumed a very unhealthy character, and was about six weeks in closing. The suppuration extended the whole length of the wound, as high as the ligature, but there is no reason whatever to suppose that the latter had anything to do with the inflammation and suppuration which supervened; these were attributable to a bad constitution, excessive loss of blood, manner of dressing the wound, and bad nursing. Under other circumstances, it is probable the ligature would have been encysted without suppuration: there was no tenderness of abdomen, or any sign of peritoneal inflammation—some tenderness and pain existed in the course of the cord.

Being much occupied with other matters, I saw this patient but three or four times after the operation. The last time I saw him was about two months after the operation, at which time the wound had completely closed, except the point at which the ligature on the cord was still hanging out;

the patient had been walking about some three weeks, and there seemed to be no appearance of return of hernia—a hard, insensible lump occupied the seat of the external ring, where the lead wire was placed—there was every reason to believe that a radical cure was achieved. The patient left town, and I have not heard of him since.

I conceived and planned this operation many years ago, but have never before put it in practice, though I had confidence in its success.

To my friend, Dr. H. S. Levert, of Mobile, am I indebted for the principle on which it is based. At the time we were medical students together, in the University of Pennsylvania, (about twenty years ago,) acting on a suggestion of our distinguished Professor, Dr. Physick, he performed a series of extremely well-conducted "experiments on the use of metallic ligatures as applied to arteries." These experiments were published in vol. iv., 1829, of this Journal, and, having witnessed many of them, I can answer for their fidelity.

Dr. Physick was led to the suggestion of leaden ligatures "by a knowledge of the fact, that bullets, buck-shot, and lead, would remain in contact with almost any tissue of the body, without producing irritation or unpleasant consequences, and that for an indefinite period."

It is unnecessary to recapitulate here the numerous experiments of Dr. Levert. He applied lead, gold, platina, silver, gum-elastic, grass, (such as is used for fishing-lines,) silk, &c., to arteries, and the uniform result was that the metallic ligatures remained *in sitû* without producing suppuration, and became firmly encysted, while, on the other hand, the vegetable substances as uniformly produced inflammation and abscess. The experiments were numerous, and varied in such a manner as to establish the facts, as far, at least, as dogs and sheep are concerned.

These facts are important, and it is strange that the profession should so long have overlooked them.

I think no argument is required to prove that my operation was justifiable on sound pathological principles. There is little to fear from peritoneal inflammation from injury done to an old uninflamed peritoneal sac, and this is, perhaps, the only danger which could occur. Where the testicle is not involved in the operation, care, of course, should be taken to avoid injury to the spermatic cord.

I recollect, some fifteen years ago, taking out a testicle in a very similar case, and a closure of the ring by subsequent inflammation, and radical cure of the hernia followed without a ligature around the neck of the sac and ring. I think it very probable that a cure would have occurred in the present case, also, without the lead ligature, as the inflammation and suppuration extended up to the ring; but still the important fact remains, that the ligature became encysted *in sitû*. In cases of hernia, uncomplicated with disease of the testicle, the metallic ligature, or some other means, perhaps, more hazardous, must be resorted to to produce the adhesions necessary for obliterating the hernial opening.

This was a first operation, and, no doubt, experience will suggest salutary modifications. I was not able to approximate the opposite columns of the ring in this case as closely as I had hoped, and, in a second operation, I should not attempt to embrace both columns, but simply to pass the ligature under the neck of the sac, and through one of the columns as a *point d'appui*, to which the neck might be firmly fixed to guard against the formation of another sac.

Dr. Levert's experiments would go to show that a gold wire would an-

swer as well as a lead one; if so, I should infinitely prefer it, as the lead does not allow of the application of much force.

P. S.—Since writing the above, I have again seen the patient, four months after the operation. He is perfectly well, and has been at hard work, as a labourer, more than a month.

ART. X.—*Case of Erysipelas Phlegmonoides.* By E. J. BEE, M.D., Assistant Surgeon, U. S. Navy.

THE following case of erysipelas phlegmonoides occurred on the 13th of February, (1845,) while off Sisal. A. L. B., a petty officer on board the U. S. Ship Falmouth, was attacked with severe shooting pains about three inches below the patella, on the inside of the left leg. He felt the first pain about 11 o'clock, A. M., and at 6 P. M., was very lame, with some fever. Has neither strained, bruised nor injured his leg in any manner whatever. Felt perfectly well in every respect, until attacked by the pain below the knee. Has always been very healthy and robust. Is a strong muscular man, weighs about 200 lbs. Sanguineous temperament, and 33 years of age. ℞.—Mag. sulph. ℥jss.

14*th.* Much worse. Pulse full and strong. Cephalalgia. Has been delirious part of the night. About three inches below the knee, on the inside of the leg, there is a flat tumour of nearly the dimensions of the smallest sized common saucer. No fluctuation. Skin scarlet, with well-bounded edges, extending a little beyond the swelling. Redness disappears under pressure, but reappears immediately on the finger being removed. Had shooting pains in his left shoulder during the night. None this morning. Tongue clean and healthy. Countenance anxious. Salts operated freely. Vs. ad deliquium animi. Poultice. Rest.

15*th.* Less fever, and head feels easier; in other respects as yesterday. Had *curious* dreams during the night, and frequently awaked with a start. Ordered leeches to the tumour, and continue poultice.

16*th.* No better. Tongue clean. Cephalalgia. Bowels open. Ordered a mixture of potass. nit. ant. et potass. tart.; acid. citric. et aqua. Cold applications to head. Nocte ½ gr. morph. sulph.

17*th.* Much easier this morning. Worse at night, with considerable fever and headache. ℞.—Vs. f℥xii, and cup temples. Head much relieved by the bleeding and cupping. ℞.—Ext. belladonna one part; cerat. simplex two parts; ft. emplast. s. Apply to tumour.

18*th.* Feels better this morning. Much less pain in the tumour after the application of the plaster. Slept well. Swelling on inside of leg, about the same, but redness of skin nearly disappeared. Pain now on the outside of the leg, attended with some swelling and redness. No fluctuation, or throbbing. Pain burning. The inflammation of the skin extends some distance above and below the knee. Continue belladonna plaster to the tumour, and lead water poultices to the outside of the leg. Cannot bear warm applications. Leg much easier after being dressed. Nocte ℞.—Mass. hydrar. grs. vi.

19*th.* Less fever. Bowels open several times during the night. The in-

flammation of the skin on the outside of leg extends within eight inches of the ankle, and about ten inches below the trochanter major. Skin deep red; becomes pale on pressure, but immediately resumes the colour of the surrounding parts, when the finger is removed. No œdema or vesicles. Pits slightly on pressure on the outside of the knee. The boundaries of the inflammation abrupt. Apply cloths, saturated with sol. of sugar of lead to whole inflamed surface, and change them every hour. Anodynes at night, and poultice of pulv. ulmi and sugar of lead water to tumour on the inside of leg.

20*th*. Much worse. Inflammatory redness within nine inches of trochanter major, and six of ankle. The abscess on inside of leg was lanced last night, and discharged a very small quantity of thin, unhealthy matter. No fluctuation on the outside of the leg, though much swelled. This morning swelling very much increased, has a doughy feel, and there is evident fluctuation in it. Made freer incision on outside of leg, opposite the knee. Discharged more than f℥xviii of serum and matter. After matter was discharged, several sloughs remained at the opening. The sloughs of the fascia were not entirely separated from the muscles; removed them with the scissors. The muscles in sight were as completely separated from each other as if dissected apart, but were very high coloured. The abscess of the inside of the leg communicates with the one on the outside by a canal crossing the tibia below the insertion of the ligamentum patellæ. Pulse 130; small and quick. Sago gruel with port wine. Cold barley water for drink, acidulated with lime-juice. Cold applications to head. Cloths saturated with solution of sugar of lead applied every hour to whole inflamed surface. Tincture of iodine above and below the tract of inflammation. *P. M.* Made incision on the outside of the leg about half way between ankle and knee. Discharged freely a very thin unhealthy-looking matter mixed with sloughs. Quantity discharged about 1¼ pints. Probe introduced at knee communicates with all parts of the abscess. The inflammation of the skin has nearly reached to the toes. The skin on the inside of the leg natural, except where the disease commenced. Bandage applied from the toes nearly to the hip. An opening made through the bandage at the several incisions to allow free exit to the discharges. Leg inclined from the hip downwards. Blister over hip just above the inflammation. The inflammatory redness of the skin has always preceded the formation of matter in the cellular tissue. Pulse 130. Cheeks flushed. Continue lead water and anodynes at night. Diet same. *Midnight.* Feels easy, and has slept well.

21*st*. Better this morning. Pulse 100. Small but less quick than yesterday. Tongue clean and healthy. Discharged f℥vi of serum and pus. Redness has disappeared from all the leg below the lowest incision. Feels easier with bandage on than off. The skin on the outside of the leg, for several inches around the knee, is of a livid colour. Discharges thin and unhealthy. ℞.—Labarraque's disinfecting liquid 1 part; water 20 parts. M. Injected a pint of this mixture, which returned with several sloughs of cellular tissue and fascia. Continue bandage. ℞.—Tinct. cinch. comp. f℥j mane et nocte. Diet nutritious. Porter. After dressing, pulse 88, and soft. *Midnight.* Sleeping.

22*d*, 6 *A. M.* Feels much better than he did last evening. Complains of his leg itching. Inflamed and somewhat œdematous around hip. Blister has drawn well, but the inflammation of the skin has crossed the tract of the blister, and is ascending the left side of the body; made incision just

below the trochanter major, to the muscles, but no pus. The incision bled freely, with much relief to the tension of the surrounding parts. Dressed blister, and administered anodyne draught. Continue same diet. *Midnight.* Feels easy, and has slept well, and without starting in his sleep. Leg itches. Less pain in upper part of thigh since incision was made. Pulse 86; soft, and not so small and thready as it has been. Tongue clean. Bowels open. Bandage continued, and leg depressed as much as possible.

23*d.* Better. Large quantity of matter discharged during the night. Repeat the injection of chlorid. of soda. Considerable matter came away with the injection, and several pieces of sloughs. Continue bandage; generous diet. Comp. tinct. cinchon. and ale. Is very weak. Has hectic fever, and night sweats. 8 *P. M.* Feels quite easy, and is disposed to sleep. Pulse 90, and smaller than this morning. Has much difficulty in urinating. Voids the usual quantity and without pain, but strains a long time before it will commence running. ℞.—Spirits nit. dulce f℥j; tinct. opii gtt. ix. M. *Midnight.* Has slept well. Very little pain; pulse 82, and soft.

24*th.* Better. Very much inflammation around hip; and extends up the abdomen; enlarged the upper incision downwards. A small artery which sprung was allowed to bleed several ounces before it stopped. No matter discharged, but the walls of the incision presented in different parts of them the appearance of globules of pus. Leg below knee much better. Discharged about f℥ss from lowest incision. Above knee much the same. Opening at knee discharged ½ pint. Scultetus' bandage applied to thigh. Pulse 80. Half hour after dressing, pulse 84, and soft. 8 *P. M.* Pulse 90; soft, but smaller than in the morning; tongue clean; swelling and inflammation about hip less. No throbbing; leg feels more natural; cold poultice to hip. Not so much straining in urinating. ℞.—Sweet spts. of nitre and laudanum. 11 *P. M.* Feels easy and sleepy; has made water freely.

25*th.* Much better; appetite good; tongue clean. Pulse 80, and soft; one-half pint matter discharged from lower incision. Repeated the injection of sol. chlorid. sod.; complained of its smarting; several small sloughs came away with the injection; swelling and inflammation about hip much diminished. Chicken broth and a bottle of ale during the day. 2 *P. M.* Pulse 86. 10 P. M. Pulse 84; patient feels easy and disposed to sleep; leg itches exceedingly. Injected the lower half of the abscess with port wine and water in the proportion of f℥j to the Oj. This injection brought away several pieces of sloughs, but gave him much more pain than the chloride of soda injection.

26*th.* Better; tongue clean and soft; pulse 88; full and soft. Leg pains him very little; made incision yesterday in the abscess to give exit to the matter collected in the lower part of it; appetite good and digests his food well. Bowels regular; continue the bandage, diet and porter; f℥j comp. tinct. cinchon. bis die. Repeated the injection of a weaker solution of the chloride of soda, which smarted very little; can introduce probe made of gum elastic bougies from any one of the incisions to the others. The sloughs which came away with the injections to-day are smaller. 6 *P. M.* Easy; leg itches very badly; says he could tear it to pieces. The itching is in the abscess and not on the surface. *Midnight.* Easy, and has slept well.

27*th.* Less discharge this morning and from upper opening. Appetite good; tongue the same; pulse 80; matter nearly the same as that of a furun-

cle. No sloughs to-day; allowed to be propped up in his cot for half an hour. Same treatment continued. 3 *P. M.* Some fever; circumscribed flush on the cheeks.

28*th.* Better; pulse 80, soft; skin moist; tongue clean; appetite good; leg looks much better and itches extremely. The extent of abscess as marked out by a probe, consists of nearly all the outside of the leg and thigh, from the great trochanter to within two inches of the ankle. Injected a quart of weak solution of chloride of soda. Returned with some blood, but very little matter. This injection was thrown in immediately after withdrawing the probe; smarted him very badly; leg much emaciated. Continue treatment and diet. *Midnight.* Feels easy, and perspiring.

March 1*st.* Pulse 90; tongue clean; constant oozing from three upper openings. Cuticle pealing off from the leg as far as the inflammation extended; extent of abscess from ankle to hip, two feet six inches. No fever yesterday; leg well washed with Castile soap and water; tents introduced in all the incisions, and limb re-bandaged. Says he feels well in every respect; stop malt liquor and reduce diet a little. *Midnight.* Passed an easy day; no fever.

2*d.* Improving; itching very troublesome; voluntary discharge of matter gradually diminishing. No fever or sweats during the day or night. Pulse 72, and moderately full; bowels regular; leg much less than the other; face thin, but expression cheerful. Continue tents and bandage.

3*d.* Improving; small boils on different parts of his leg; cuticle has nearly all pealed off; can use leg without pain, but says he *is stung halt.* Small discharge from upper openings; tents and bandage continued.

4*th.* Pulse 74; no fever at night; extent of soreness very much diminished. Appetite good; bowels regular; no medicine.

5*th.* Feels very well; matter weeps slowly from upper opening. Lance boil on the calf of the leg, the others mere pustules.

6*th.* The upper incision discharges yet. Continue tents and bandage.

Tents, bandage, and rest were continued until the 10th, when he was permitted to walk about the deck on a crutch.

27*th.* Walks about during the day on his crutch; no stiffness of the knee, but can bear very little weight on his leg. Incisions all healed up. After being on his feet some time, says his leg feels large and heavy; general health very good. The bandage was removed from his leg gradually, from the top downwards.

Being on his feet, his leg swelled so much, that he was sent to the hospital, where he remained several months. Upon the return of the Falmouth, he rejoined her a strong, robust man. He was somewhat lame, but not enough so to impede his movements, or render him clumsy.

Remarks. For the above described disease, I am unable to assign any satisfactory cause. The patient was a very athletic man, of a robust constitution, and, as far as I could learn, not given to dissipation. It was his first cruise in a man-of-war. His health has always been very good, and was good to the very day of the attack. Throughout the whole course of the disease, there was no indication of disorder of his stomach or bowels. He slept under the top-gallant fore-castle, where there was a free current of air, and always with the left leg uncovered. The days were exceedingly warm, and the nights cool and very damp. This is the only assignable cause for the attack.

I wish to call attention to the beneficial effect obtained by injections of a solution of Labarraque's disinfecting liquid. The change for the better was almost immediate. The first injections gave the patient no pain, but after a few days they produced so much smarting that I only injected a part of the abscess at a time. I was induced to try the injection from Dr. Thomas Wells' recommendation of its use in empyema, as reported in the July number of the *American Journal of the Medical Sciences.**

The bandage not only gave the patient great relief, but the inflammation of the skin very rapidly disappeared under its application. Also, by means of the bandage, I was enabled to keep the leg depressed to avoid the influence of gravitation causing the matter to approach more rapidly the body. Neither the tincture of iodine, nor blister exercised any power of arresting the progress of the inflammation. The inflammatory blush extended several inches beyond the boundaries of the abscess. On the left side of the body it mounted to within a few inches of the false ribs, embracing nearly half of the abdomen. It was during the time that the inflammation was at its height about the hip, that the patient experienced his difficulty of urinating. There was not the least appearance of inflammation in the immediate neighbourhood of the genital organs.

The incision near the hip was made without regard to the formation of matter in the cellular tissue. Although the muscles were exposed, no collections of pus were found, but the next day globules of pus could be seen in different parts of the walls of the incision. Afterwards, upon enlarging the incision downwards, the top of the abscess was met which discharged freely.

ART. XI.—*Case of William Freeman, the Murderer of the Van Nest Family.* By BLANCHARD FOSGATE, M. D., of Auburn, N. Y.

WILLIAM FREEMAN—the murderer of the Van Nest family—was a native of Auburn, Cayuga Co., N. Y., twenty-three years old. In stature he measured about five feet seven inches, and when in health weighed in the vicinity of one hundred and fifteen pounds. He had a broad chest, and was of muscular make. With the exception of a slight admixture of aboriginal blood, he was of African descent.

At the age of sixteen he was sentenced to five years' imprisonment in the State prison at Auburn, for grand larceny. It was long since conceded that of this charge he was innocent. His sentence expired in September, 1845. He left his prison conscious of the injustice he had suffered, and had imbibed an idea that he was entitled to pay for his time. This sentiment could not be eradicated from his mind, and on several occasions he

* I have since seen the same treatment recommended in Copland's Dictionary, (*Art. Erysip.*)

applied for warrants against those whom he supposed liable. Remuneration with him was the *one idea.* Failing in this mode of obtaining redress, he armed himself with a common butcher's knife, and a cane with a blade attached to the lower end, and from his lodging made his way toward the Owasco Lake, at about sunset on the 12th of March, 1846. After examining two or three premises, he finally selected the residence of Mr. Van Nest as the proper place to begin "his work," as he termed it, and there massacred Mr. Van Nest, his wife and one child, aged two years, and Mrs. Wyckoff, aged seventy. He stabbed Mr. Vanarsdale in the chest, who subsequently recovered. In the affray he entered every room in the house, both above and below, but took nothing away. He went to the stable, unfastened and mounted a horse, and was some rods from the scene of devastation in the incredibly short period of not more than five minutes from the time of entering the house, as was proved in evidence. Three days afterwards he was committed to Cayuga county jail to await his trial.

He was tried at a special session of Oyer and Terminer, July, 1846—first, as to whether he was sane at the time of trial, and secondly, on the indictment. A verdict of *sufficient* soundness of mind to be put on trial was rendered on the preliminary issue, and of wilful murder on the indictment. Subsequently, however, a new trial was granted by the Supreme Court. A trial calling forth so much talent in its prosecution, and arousing such fearful excitement among the people, is of rare occurrence.

On the part of the people, the cause was conducted by Hon. John Van Buren, attorney-general of the State of New York, and for the defence by Hon. William H. Seward, ex-governor of this State.

My knowledge of the prisoner commenced on the 16th of March, 1846, being the day after his commitment, and it continued until the completion of a post-mortem examination of his body on the twenty-first of August, 1847.

During the scene at Van Nest's, he received a severe wound in the articulation of the right thumb with the carpus—the artery barely escaping division. This circumstance saved the lives of other members of the family, because, to use his own expression, "he couldn't handle his hand any longer."

My services were required on account of this injury. In addition to the wound, I also found him entirely deaf in the left, and partially so in the right ear.

It was a singular circumstance that he never made an inquiry as to either the extent or condition of the injury, or the time necessary to complete a cure, or the prospect of recovering the use of his hand—though it was the right, and as a laborer was his main dependence. Neither did he complain of any sensibility in the wound, although the physical evidences of pain accompanying the inflammatory stage were such as to leave no doubt of its existence. In fact from the time of his commitment until the day of his death, although he often saw, and was attended by me through his last sickness, he asked only two questions, one about his medicine, the other regarding his diet, and these were made during his last illness.

During the principal part of his incarceration, he passed his time standing; his body erect—his head a little drooping, and with arms folded. He sustained this posture with statue-like stillness—indicating great muscular strength. He exhibited a calm, quiet expression of countenance, occasionally broken by a smile, which had the appearance of just bursting into laughter, but would quickly subside, leaving the same unalterable expres-

sion, as undisturbed as though a gleam of mirthfulness had never occupied his fancies. To the careless observer, it appeared as though he endeavored to suppress an irresistible propensity to laugh. This smile was never accompanied by any vocal sound, but often glowed upon his feature, regardless of time, place or circumstance, indicative of intense mental emotion. For this emotion he could never assign a cause. I say he never could, because, when asked, he always said he "didn't know." My conclusion is also based upon the remarkable fact, that on the trial *seventy-two* witnesses on both sides coincided in the opinion, that the prisoner did not intend to deceive in any reply made to the numerous interrogatories put to him.

His deafness increased until the sense of hearing was nearly, if not quite, obliterated. I doubt whether he heard any conversation for the last two weeks of his life; at all events, I could not get a reply that harmonized with my question.

On the twelfth of April, 1847, I was called to see the patient as being "not very well." He had a quick thready pulse—considerable cough, with free expectoration—not much appetite, but rather thirsty. He made no allusion to these symptoms, but directed my attention to his left ear, which discharged pus profusely. From this time forth, the aural discharge continued, accompanied by all the symptoms of tubercular phthisis, until his existence terminated, six days after the chain that bound him to the masonry of his cell had been removed.

About three weeks previous to his decease, I observed a prominent protrusion of the left eye, and upon further examination there proved to be an entire obliteration of vision. He could not close the lids over it, for they, with all the muscles of that side of the face, were paralyzed, and the mouth considerably drawn to the right. The cornea of both organs had much the same appearance. The loss of vision, I am inclined to think, was the result of functional, not organic, lesion. The protrusion depended most probably upon the loss of muscular power in its motor apparatus, in common with the muscles of that side of the face. The globe, in *articulo-mortis*, recovered in a great measure its natural location, as did the paralyzed muscles of the face—a common occurrence of facial distortion from nervous lesion at death.

Owing to insufficiency of light in the cell, but more particularly to the shattered condition of the patient—being deaf, almost blind, and nearly speechless—no satisfactory account of symptoms or the effect of remedies could be obtained from him.

As this case presents points of interest in many particulars, I would remark that phrenologically, Mr. Fowler says, "he is very defective in the mental temperament, and has great predominance in the muscular. His propensities (with the exception of self-esteem and firmness, very large—and combativeness and destructiveness, large) are all small, and have but little influence. The intellectual faculties are not so small, yet the quality of brain considered, their influence is quite limited. He has one of the most imperfect developments of brain I ever saw. He has no real balance to his mind; it is entirely one-sided, he being at the mercy of circumstances, and the stronger propensities." (See *Phrenological Almanac* in press for 1848.) Another phrenologist, though of less notoriety, has allowed him a much better development; but whatever the external evidences of mind the contour of his head may denote, they all have reference to a healthy brain.

I have measured his cranium in two ways: First, by passing a string across the frontal and around the spinous process of the occipital bones. It measured, in the greatest circumference, twenty-one inches. Secondly, after the directions laid down in Combe's phrenology by Callipers.

Viz. from occipital spine to individuality	$7\frac{3}{8}$	inches
" occipital spine to ear	$4\frac{1}{8}$	"
" ear to individuality	$4\frac{2}{8}$	"
" ear to firmness	$5\frac{3}{16}$	"
" destructiveness to destructiveness	$5\frac{3}{8}$	"
" cautiousness to cautiousness	$4\frac{7}{16}$	"
" ideality to ideality	$5\frac{1}{8}$	"

On proceeding to a post-mortem examination, the body was found extremely emaciated. The costal and pulmonary pleura, though easily separated, were extensively adhered, and the lungs were an almost entire mass of disease. Tuberculous matter was interspersed with abscesses throughout the whole organ. The pericardium contained about one and a half gills of serum. The heart contained polypi, but had a healthy appearance. Liver natural. Gall bladder a little distended. Mucous membrane of the stomach slightly inflamed. Intestinal mucous coat healthy. Mesenteric glands tuberculous. Urinary bladder distended. Kidneys natural. The peritoneum appeared healthy, but the sac contained some fluid.

Upon opening the cranium, the bones were found rather thinner than ordinary, particularly for a colored subject, and the dura mater was adherent to a portion of the occiput. The anterior portion of this membrane was congested and inflamed, with considerable serum between it and the arachnoid. This latter tunic was somewhat thickened and congested. The anfractuosities of the right hemisphere of the cerebrum were filled with serum. The superficial vessels of the right anterior lobe highly congested on the superior surface. Cerebellum to all appearance healthy.

The whole brain, separate from the dura mater, weighed $43\frac{3}{4}$ ounces avoirdupois. Cerebrum 38 ounces. Cerebellum $5\frac{3}{4}$ ounces.

On section of the medullary substance, it was found thickly studded with bright red points. The right thalami appeared to have undergone some change, and the whole superior brain was more or less congested. The membrane covering the petrous portion of the left cavity was congested, and the remaining parts of it appeared healthy.

There were caries of the inner part of the petrous portion of the left temporal bone. The membrana tympani, with the internal structure of the ear, mostly obliterated. There was a necrosis containing fetid pus, having no perceptible connection with the external ear.

Remarks.—The important question connected with this subject is, whether the pathological state of the brain, its membranes and the ear, is one of long standing or of recent occurrence? On this point rests the physical evidence of the prisoner's accountability. If by possibility it could be determined that the organ of mental manifestation was without disease when the crime was perpetrated, then depravity unparalleled must be assigned as the only cause; and if so, the disease of the organ at his decease could not be held in extenuation of his crimes.

That the diseased condition of the brain was of long standing, appears to

be unquestionable from the fact, that the mental organ could not sustain so great a lesion as the autopsy presented, without the mind having exhibited sudden and violent derangement, as well as other symptoms which accompany its acute diseases. This, however, was not the case. He never complained of, or exhibited the ordinary symptoms in such instances, nor ever gave evidence of any mental change whatever; but on the contrary, presented the same characteristics throughout. During his last sickness, there was not a single symptom indicating acute inflammation of the brain, and yet, on examination after death, there were abundant and unequivocal evidences of inflammatory action there.

The disease of the ear also was chronic, and dated its commencement some months previous to the commission of the crime. On his trial it was proved in evidence that about two years previous—when an inmate of the state prison—he was struck on his head with a board, the blow splitting the weapon into fragments. He attributes his deafness to this cause, or, to give his own description, "it knocked his words down his throat—his ears dropped down—his kernels (meaning the tonsils) dropped." Now the infliction of this blow upon a thin skull, associated with his own account of its effects, would lead us to conclude that the concussion seriously injured the auditory apparatus. It possibly burst the tympanum, and if so, it opened a communication between the external ear and the fauces, which induced the remark that "it knocked his words down his throat," &c. Is it not a just conclusion, that from this injury the diseased action was set up which ultimately involved the whole brain?

Whether the facial paralysis was the result of cerebral congestion, or whether it was owing to a diseased state of the nerves of motion in connection with the condition of the ossa petrosa, may be questionable, because the nerves, as they passed off the brain, were apparently healthy; but the right hemisphere of the brain being the most deeply implicated in the organic derangement, the paralysis would appear, as it did in this case, in the muscles of the opposite side.

It should not be forgotten, that the deceased had passed through scenes of blood seldom equaled, where but a single individual was the aggressor; that he had been surrounded by the wild fury of an enraged populace for hours; that he had been chained, and for a portion of the time bedded upon the stone floor of a dimly-lighted cell, for almost eighteen months; suffering the jeers and grimaces of inhuman and uncounted spectators; wasting by the slow process of consumption; sustaining the blight of one physical energy after another; with little compassion and less than ordinary attention; and through the whole period, having scarcely asked a question regarding either friend or foe, soliciting no favour, showing no hatred, exhibiting no remorse, entering no complaint, and through all, sustaining an *undisturbed tranquillity*.

From this concatenation of circumstances, this unruffled, equable,

almost idiotic state of mind, that no external relation could disturb, or internal influence alter, we can scarcely come to any other conclusion by pathological reasoning, than that the state of mind which he exhibited subsequent to his arrest, depended on a chronic derangement of the mental organ, and must have existed antecedent to the crime itself. If such a combination of pathological facts, and all the other circumstances attending the prisoner from his arrest to his death, do not establish an unsound state of mind, they at least present one of the most extraordinary cases furnished by the annals of our race. Such a case demands the careful consideration of the philosopher and jurist.

How much the cause of justice and philosophy is indebted to the unwearied perseverance of the eminent advocate who withstood the tide of popular indignation in conducting the prisoner's defence, is left for other hands to register; but true it is, that over prejudice and ignorance, science has gloriously triumphed.

Auburn, N. Y., Sept. 1, 1847.

REVIEW.

ART. XII.—*Report on the Fever at Boâ Vista.* By Dr. McWILLIAM. Presented to the House of Commons, in pursuance of their Address of the 16th of March, 1847. London, 1847. Folio, pp. 112.

Letter addressed by SIR WILLIAM PYM *to the Lords of the Council, relative to a Report on the Fever at Boâ Vista*, by Dr. McWILLIAM. Presented to the House of Commons, in pursuance of their Address of May 14, 1847. London, 1847. Folio, pp. 16.

BOTH of these documents are of a highly interesting character. That of Dr. McWilliam presents a mass of evidence, of apparently an unexceptionable character, which establishes the fact that a febrile disease of a very malignant type, may be introduced among a community by the arrival of a vessel with an unhealthy crew,—the disease infecting those who have intercourse with the sick, spreading thus from place to place, and finally becoming general by the multiplication of the foci of contagion. We cannot, however, agree with Sir William Pym that the facts adduced by Dr. McWilliam have finally decided and set at rest a most important and long-contested question, relative to the nature and history of *Yellow Fever*, more particularly as to its infectious power. Unfortunately we are presented in no part of the report with any accurate, or in fact, any detailed account of the peculiar symptoms, invasion, and course of the fever which prevailed at Boâ Vista, and hence we are unable to form any opinion as to the identity of the disease with either the yellow, the Bulam, or the malignant intermittent fever of warm climates;—three forms of fever which are often confounded under the general appellation of yellow fever, though there are good reasons for believing them to be different if not distinct diseases. It is true, we are told, that most of the cases, in which the disease terminated fatally, were marked by delirium, retention of urine, and the vomiting of a dark-coloured fluid. But upon so loose an enumeration of symptoms no one would certainly predicate an important diagnosis, on the perfect accuracy of which will depend the truth of Sir William Pym's assertion, based upon the evidence in the report before us, namely, that the yellow fever is a highly infectious disease.

The facts communicated in the report, are, nevertheless, of an important character, so far, at least, as they present the data for positive deductions: they have been evidently collected with much care and industry.

The narrative in relation to the introduction of fever into Boâ Vista, one of the Cape de Verd Islands, and its spread among the inhabitants of the several towns and villages of the island, is as follows:

On the 21st day of August, 1845, her majesty's steam vessel Eclair arrived at Boâ Vista, from the west coast of Africa. Her crew were suffering from fever, which had first appeared early in the previous June, when the vessel was stationed at the mouth of the Shearbar River, and again broke out after she had proceeded to Sierra Leone, and remained

there for 18 days. Here the crew, in addition to other duties, were employed in clearing out the hold of the Albert steam-vessel, which had been engaged in the Niger Expedition, as well as that of their own vessel, and afterwards were allowed to go on shore, during the period of the rains.

When she left Sierra Leone, the Eclair stood to the northward, with the Albert in tow, and anchored at a considerable distance from the shore, where both vessels remained from the 28th of July to the 8th of August; upwards of twenty of the Eclair's men being, in the mean time, still engaged on board the Albert, cleaning, and in other ways preparing that vessel for the service of the government at the Gambia.

The Eclair went into the Gambia on the 10th of August, and having delivered up the Albert to the authorities there, left on the 15th of the same month. On her way to Boâ Vista, she called at Goree to deliver dispatches, but was not permitted further intercourse with the shore. Meanwhile the fever was steadily gaining ground. In addition to those who were on the sick list when the vessel left Sierra Leone, three of the men who had slept on shore there, were attacked and died. A merchant from Sierra Leone, who was taking a passage, also died of fever on the 27th of July, and 15 new cases were added in August, before the vessel reached Boâ Vista, of which seven were eventually fatal.

On arriving at Boâ Vista, Mr. Kenny, an English surgeon, proceeded, by direction of the governor-general, on board the Eclair, to inquire into the nature of the disease prevailing among her crew; on his return, he reported that the disease was the common endemic of the African coast, and not of a contagious or infectious character. Upon this representation, the authorities at Boâ Vista, without further hesitation, granted the Eclair free intercourse with the shore. In the evening several bags of soiled linen were brought on shore, deposited for the night in one of the consul's store-rooms, and distributed the next day, among the washerwomen of the town. Shortly after the ship was at Boâ Vista, the crew were again employed in removing tanks, clearing holds, &c.

The number of fever cases continuing to increase, it was judged advisable to remove the crew from on board, to a fort situated on a small island at the entrance of the harbour; which was effected on the 31st of August. The healthy portion of the crew were also lodged within the walls of the fort, but in apartments separate from those of the sick.

"This small island lies in a direction about southeast and northwest, within the northern extremity of an extensive bay, on the western side of Boâ Vista, and is about half a mile distant from Porto Sal Rey, the chief town of that island. It is rather less than a mile in length, and under a quarter of a mile in its greatest breadth; and is composed of a basaltic base with a calcareous incrustation on the surface. On the north-eastern side the rock rises to the height of about fifty feet, with a tendency to the tabular form, and of a distinctly columnar structure. Towards the north-western end it gradually shelves down to the sea, and is margined by a conglomerate of broken and rounded fragments of basalt, pieces of coral and shells, held together by a calcareous sandstone. The fort stands upon a bare hill of basalt, from forty to fifty feet above the sea-level, near the southern end of the island. The whole building is in a state of disrepair, if not of dilapidation. Some sheds and huts, in a ruinous state, extend along each side of the yard, and were, it is believed, assigned to the healthy part of the crew. The house in which the sick were lodged, consists of two floors. The upper one, which contains one room, sixteen feet square, and two others exactly half that size, is well provided with windows, and is exposed to the breeze. The under floor is of the same dimensions as the upper one, but is somewhat differently arranged. The whole of this lower floor is close, hot, and miserably ventilated."

The disease in no degree abated after the sick were in the fort; on the contrary, it seemed daily to acquire fresh virulence. On the 8th of September the assistant surgeon died, and was replaced by a volunteer, the assistant surgeon of the ship Growler, which had arrived two days before from the coast of Africa.

On the 11th of September, the captain of the Eclair was taken ill, and conveyed at once to the fort.

The ship had now been just three weeks at Boâ Vista, and the disease, instead of being checked, as had been hoped, was daily gaining ground; not less than sixty fresh cases had been added to the sick list, and some deaths had taken place nearly every day. A consultation of medical officers being convened, recommended that the vessel and crew should proceed to Madeira, and in the event of no material improvement taking place by the time she arrived there, that she should go on to England. The whole of the sick were, therefore, re-embarked on the afternoon of the 13th of September, and the same evening the Eclair, in company with the Growler, sailed from Boâ Vista.

At the time the crew of the Eclair were landed at the fort, the gun-room midshipmen and warrant officers occupied a house in Porto Sal Rey. The necessary duties on board the ship were carried on under the superintendence of the first lieutenant. These comprehended the clearing of the holds, cleaning ship generally, and watering and coaling her. The first of these duties had been already commenced by the Kroomen of the ship, assisted by two white seamen. The operations of coaling and watering were performed with launches belonging to the merchants of the place, manned by mulatto and negro natives. These, it was at first understood, were not obliged to do duty below decks; nevertheless, of the forty who were employed upwards of a week on board, hoisting in coal bags and water casks, several assisted in cleaning, white-washing, and restowing the holds; most of them were, during some period, on the lower deck, and nearly the whole, including the launch men, were on board the ship the day she sailed, and after the sick had returned from the fort. The whole of the labourers on board and on shore, as well as the launch-men, 87 in number, went to their respective homes every night, except those from Estacia and the eastern villages, who generally slept at Porto Sal Rey.

The coal heap labourers, as well as the launch-men, mixed freely on the island with those of the Eclair's people who were not on the sick list; but it does not appear that any of these, with the exception of a slave, who afterwards died, visited the rooms where the sick were lying. Dr. Almeida, from Porto Sal Rey, visited the sick once, as did also Mr. Kenny, frequently. A native occasionally brought supplies from the country to the crew, and he was very strongly suspected of having smuggled spirits into the fort. The consul's storekeeper, who superintended the launches on shore, and the soldiers of the guard, were the only persons belonging to the island who had daily intercourse with the sick crew.

Of the seventeen women employed in washing the soiled linen brought from the vessel on her first arrival, all but one were attacked with fever, and four died. Two were attacked late in October, five in November, two in December, three in January, and one not until some time in February. None of the deaths took place until fever was general in Porto Sal Rey. So that in none of these cases can the occurrence of the fever be fairly attributed to infectious matter conveyed by the linen.

The officers of the ship and their servants were daily in various parts of the town of Porto Sal Rey. The purser was, for some days, at the house of Mr. Kenny, the surgeon, and while there, was affected with a nervous disease. Some of the other officers, the captain's cook and other servants, were taken ill in the town, but immediately upon being attacked were sent to the fort.

During the early part of the stay of the Eclair at Boâ Vista, leave was given to the petty officers and a few of the sailors to go on shore. The seamen seemed to have resorted chiefly to the house of a man who kept a spirit store in Porto Sal Rey. It is remarkable that this man was attacked with headache and general fever on the evening of the day he was visited by the Eclair's people; he was attended by Dr. Almeida, and seen by many of his friends during his illness, which lasted a fortnight. Among the latter were two females, both of whom had slight fever shortly afterwards. Both these women, however, had been visited by people from the Eclair. They soon recovered, and their illness, at the time, attracted no notice whatever.

When the crew took possession of the fort, there was stationed there a guard of three soldiers, who had occupied the fort already three or four days. The guard slept in front of the upper room occupied by the sick, and often went into it. The corporal had a headache two days after the sick were landed, which, at first, yielded to cooling fomentations. In two days more he and his comrades were relieved; he was still rather unwell, but making no complaint, was posted as a sentry at the barracks in Porto Sal Rey. He was, however, soon taken ill, and sent to his home in Pao de Varella, where he was confined some weeks. His case caused no alarm, nor was he attended by any medical man, further than being seen once by Dr. Almeida during his convalescence. The other two soldiers had also attacks of fever, the one three weeks or so after he left the fort, and the other not until fever was general in the barracks.

The second guard was on duty at the fort six or seven days; none of them were at all affected during this time. They, however, all had fever afterwards, of which one of them died.

The third guard appears to have been at the fort several days before and after its evacuation by the sick of the Eclair. The day the Eclair left, one was ordered, by the corporal, to sweep out the rooms which had been occupied by the sick, and all three went into the rooms on this occasion. On the day after the steamer sailed, the corporal was attacked with fever, and died in three days delirious, and vomiting a black fluid. One of the privates was similarly seized on the day following, and died on the fourth day with fever, delirium, and black vomit. Both these men were seen by Dr. Almeida when in *articulo mortis*.

A negro soldier, on duty with the second guard, was ordered to bury the bodies of the two men of the third guard who had died from the fever. He left his two comrades in the boat, and, stripping himself, ran up to the fort in a state of nudity, and there, with the assistance of the survivor of the third guard, and a negro soldier sent to attend upon the sick, rolled the bodies in quilts and carried them down to the boat, which transported them to the beach, about a mile and a half to the southward of the town, where they were buried in the sand.

The fourth guard was composed of native soldiers, viz., the man who buried the bodies of the two soldiers of the third guard, and two others.

The same boat that conveyed them to the fort, on its return brought the men who assisted in rolling up the bodies of the dead men to Porto Sal Rey; they were, however, not admitted at once into the barracks, but sent to a house in the upper and northern end of the town, which is a part of the district Pao de Varella. The soldiers of the fourth guard lived in a room next to that in which the sick of the Eclair had been. One of them was taken ill in the course of two days, and, strange to say, was at once conveyed to the barracks in Porto Sal Rey. The two others were, in the course of ten or twelve days, relieved from duty at the fort. One of them was taken ill with fever some days after he returned to the barracks, and died on the 26th of November. The other was also attacked, and recovered after a dangerous illness.

A fifth guard was sent to replace the fourth. One was attacked with fever three days after he had been there. The guard was then withdrawn altogether. Another of them was attacked in the course of three days.

In the town of Porto Sal Rey, the first case of fever appeared in the room adjoining that in which the two soldiers who were removed from the fort were lodged. These soldiers remained in this house about eight days, during which time they had many visitors. They were not laid up; but it is evident they had the germs of fever in them from the symptoms they manifested, and from their being soon after both attacked with fever. Both declare that they had brought nothing from the fort except the clothes they had on and a Portuguese flag. Their clothes were taken by the wife of a negro mason to be washed. The husband had been a visitor of the soldiers to whom the clothes belonged; he was attacked with fever soon after they returned to the barracks, as were also his daughter, niece and wife, but the latter not until the fever had become general in the town.

Two females who were next door neighbours to the soldiers were constantly with them, one of them acting as their cook. The latter was attacked with fever in the course of three or four days after the soldiers left, and died with high fever, delirium, and black vomit. She was taken ill about the 12th, and died on the 16th of October.

A mulatto who lived about twenty yards from the house of this female, was taken ill with the fever about the same time, and died on the 18th of October. He had not had any intercourse with the sick of the Eclair, but is suspected of having had a blanket and rug from that vessel in his possession. A mulatto woman who had visited the last-mentioned person, and the female who cooked for the soldiers, and lived next door to the latter, were attacked with fever, the day after the man's death, and died with the same symptoms as the female. A man who arrived at Boâ Vista from Madeira a few days after the departure of the Eclair, and had occasionally seen the man last referred to, during his illness, and afterwards carried his corpse and that of the female to Rabil for interment, was shortly afterwards attacked with fever, which proved fatal in a few days. A man who had attended this person during his illness, was also seized with the fever, and soon after died. His widow was likewise attacked, but recovered.

Two females who lived the second door from the cook, were both attacked and recovered; and a female who visited her was taken ill and died.

During the latter half of November, and throughout December, 1845, and a part of January, 1846, the disease was at its height in Porto Sal Rey, sometimes six or seven persons dying in one day. Meanwhile the gover-

nor-general, with his suite, several of the better class of Portuguese, and the whole of the English, with the exception of six, left Boâ Vista for the other islands of the group. A rigid quarantine was also imposed upon Boâ Vista. The whole of those who left the island are reported to have continued perfectly free from fever with one exception.

Mr. Pettingal, the arbitrator of the mixed Commission Court at Boâ Vista, who left the island on the 22d October, for San Nicolao, returned on the 11th Nov., under the belief that the disease had nearly if not altogether disappeared.

The family of this gentleman, consisting of his wife and daughter, were lodged for the first night on their return, with Mr. Macauly, and on the following day removed to their own house. A day or two subsequently, two mulatto girls, who, during the absence of the family, had been in charge of the house, were both taken ill with fever. One remained in the house three days after she was attacked, and was, during this time, frequently visited by Miss Pettingal. Both girls recovered; but six days after the return of the family to Boâ Vista, Miss Pettingal was seized with symptoms of fever, which, in forty-eight hours, was marked by black vomit and retention of urine, and terminated fatally on the seventh day. This young lady was attended during her illness by an English nurse, and constantly visited by her father, mother, and Dr. Kenny, her physician. The captain of an American vessel, who had been at Porto Sal Rey for some weeks, frequently visited the house during the daughter's illness, and assisted on one occasion in shifting the bed on which she lay, from one room to another. An English servant of Mr. Macauly, also assisted during Miss Pettingal's illness, and slept one night at the house. The latter was attacked on the 25th of November, and died on the fifth day with the most malignant symptoms of yellow fever, in the house of his master. The nurse was attacked about the same time, and died on the 27th of November, as was also Dr. Kenny, who died in Rabil also, on the 27th of the month. The American captain had violent vomiting two days after the death of Miss Pettingal, when he was put on board a small vessel, and conveyed to the adjacent island of Sal, with the view of joining his own ship. The authorities there, however, would not allow him to go on board or to land, and he died on his return to Boâ Vista, just as they were entering the harbour.

Two days after the death of his daughter, Mr. Pettingal, with his wife, embarked in a schooner, and sailed for San Nicolao. During the passage he seemed completely prostrated by mental, rather than physical suffering. The vessel arrived at San Nicolao on the following day, and was ordered to perform a quarantine of fifteen days, at a desolate part of the island; which greatly aggravated the despondency of Mr. Pettingal. He now complained of pain in his legs, which exhibited large dark-coloured patches, acidity of stomach, general pains and yellow suffusion of the eyes; hiccup and black vomit closed the scene on the 5th of December. Immediately after his death, the vessel returned to Boâ Vista, and landed Mrs. Pettingal there. On the passage one sailor died of yellow fever, and another went on shore ill at Porto Sal Rey, where he died of the disease.

By the end of April, 1846, Porto Sal Rey, as well as the residue of the island, was quite free from fever.

The total population of the island was 4395; of those 17 left, leaving 4378 exposed to infection; of these 311 died. The ratio of mortality was as follows:—

Amongst Portuguese, Spaniards, and French, who were exposed to the fever,			1 in	2·28
" English and Americans,	"	"	1	1·60
" Native population. Slaves,	"	"	1	33·4
" " " Free,	"	"	1	14·6
Average mortality of Native population,	"	"	1	15·4

On the 30th of May, it was reported to Dr. McWilliam, that there were some people labouring under suspicious symptoms at Moradinha, a village in which the mortality had been remarkably small during the prevalence of the epidemic. On proceeding to the spot, the Doctor found two persons, a girl of 14 years of age, and a man about 35, with all the symptoms of a most malignant fever.

The countenance of the girl, a dark mulatto, was of a dirty lemon-colour; shining through the natural darkness of the skin, it made it resemble very much that of a light bronzed statue. A very strong fetor issued from the body, which tainted the room and drove the Doctor and his attendants back from the door until the window was opened. She had complained much of pain along the spine, and still pointed to her head as the seat of pain. She had been bled in the arm by one of the neighbours, and all around the wound was of a greenish colour, swollen and putrid. In the angles of the mouth there was dark frothy blood. She had had black vomiting, but this symptom had for some hours ceased. The urine was black, as were also the fæces. The former had been voided in very small quantities. Pulse small, irregular. She had been ill seven or eight days.

The man had nearly the same symptoms, but in a milder degree; he had not been affected with black vomit.

By the directions of Dr. McWilliam, the patients were placed in as large a house as the village afforded—a temperature of 140° Fah. was introduced into all the houses; the clothes of two persons who had already died were burned; and the village was surrounded by soldiers, so as to prevent ingress or egress to all except the medical attendants. On the following morning, he found the girl just expiring; the man was not worse, and was reported to have rallied somewhat during the night. The nausea had in a great measure subsided under the use of small and repeated doses of quinine. The urine gradually became lighter, and increased in quantity; the headache was relieved, he took some nourishment, and was convalescent in five or six days.

Four other cases occurred between the 1st and 3d of June. In none of them was there black vomit; they soon passed from the continued to the remittent form, and all recovered under the use of quinine, mild aperients, and nourishing diet.

The first person attacked at Moradinha on this occasion, was a girl. She had visited the eastern villages on the 15th of May, and returned to Moradinha, where she was attacked with the fever on the 20th. Her mother who slept with her one night after she was taken ill, was attacked on the 26th, and died on the 29th. The girl seen by Dr. McWilliam, had visited the daughter during her illness, a short time before she was attacked.

The disease did not extend to Rabil, or any other of the villages, and on the 13th of June, the whole of the remaining patients were convalescent.

"Under ordinary circumstances," Dr. McWilliam remarks, "the fever which attacks ship's crews on the African coast is the common bilious remittent. Seldom,

if ever, has it happened that a disease characterized by black vomit has at once broken out in a ship. This malignant symptom rarely occurs, even on shore, except during some of the more severe epidemic visitations. Judging, therefore, from the result of general experience, as well as from the medical reports, it seems to me to admit of no doubt, that the disease which invaded the Eclair in the latter end of May and early part of June, 1845, was the usual endemic fever of the African coast, which, although a most fatal disease, is not considered to be of an infectious or contagious nature. The mental despondency which seems to have pervaded the crew rendered them indeed peculiarly susceptible of disease, not only while on detached service in the boats up the river, but also on board the ship (around which the commonly recognized causes of fever were in great abundance), and on this account it is probable that the fever was of a more aggravated type than usual.

"At Sierra Leone, the irksome and unwholesome duty of cleaning the hold of the Albert, as well as that of their own vessel, the unwonted exposure in some cases by day and night, the irregularities committed by men who had for some months been exposed to morbific influences, all combined to the development of a fever of a much more malignant nature than the usual endemic of the African rivers. Accordingly, several of the cases that occurred after the ship left Sierra Leone were marked by unequivocal black vomit—a symptom, as has been already mentioned, extremely rare in the endemic fever, and regarded by all who have served in hot climates, as a test of unusual malignancy. It is thus quite evident that the type of the fever changed materially for the worse during the passage from Sierra Leone to the Gambia and Boâ Vista. There is also great reason to believe that it acquired still greater virulence while the crew were at the fort. The house in which the sick were lodged there contains only one room at all well ventilated, and judging from the evidence of Dr. Almeida, they must have been much crowded; at all events, the fact is beyond doubt, that the accession to the sick list and the mortality became much greater at this than they had been at any previous period. In short, from the endemic remittent of the African coast, the disease had, from a series of causes, been exalted to a concentrated remittent, or yellow fever.

"The European soldiers who were attacked with fever so soon after the departure of the Eclair, had arrived from Portugal in August, 1844, and had been performing the usual military duties of the island, which are by no means of a laborious nature. They had never been on board the Eclair. To state with great precision what their symptoms were is not in my power, for they were not seen by a medical man until in *articulo mortis*. The account, however, of their negro comrades, although brief, emphatically shows that the disease of which they died was an intensely malignant fever. They had general fever, delirium, and at last black vomit. The same description belongs to the fever that afterwards broke out on the Island of Boâ Vista. Dr. Almeida, who was present during the early period of the epidemic, and Messrs. Moraes and Leao, surgeons in the Portuguese navy, who arrived in February, informed me that in the majority of the cases there were yellowness of skin, suppression of urine, and black vomit. The two former symptoms existed in the cases I saw at Joâo Gallego in April, but there was no black vomit. Suppression of urine was so common a symptom, that it has been mentioned to me by all classes with whom I spoke on the subject of the fever. It is worthy of remark, that according to Louis, this was an extremely rare symptom in the epidemic at Gibraltar in 1828. It seems then hardly to admit of a doubt that the disease with which the crew of the Eclair were afflicted, that which proved fatal to the European soldiers at the fort, and that which soon afterwards prevailed on the Island of Boâ Vista, were identical.

"I have already endeavoured to account for the malignant character assumed by the fever among the people of the Eclair, but it still remains to be shown how the soldiers, natives, and other inhabitants of Boâ Vista became affected with a similar disorder.

"In the present state of our knowledge regarding the telluric origin of disease in warm climates, it is hard to say what kind of soil may not generate fever, but the position of the fort, on a bare basaltic rock, the dry calcareous surface of the

small island generally, its extreme aridity and free exposure to the trade breeze, would lead one to suppose that fever was at all events not likely to originate there. But the soldiers had only a week before they were seized with fever, come from Porto Sal Rey, where, at least in a theoretic view, the condition of the soil, during and after the rainy season, is such as may cause fever. Assuredly many bad fevers have been attributed to less obvious causes. At Rabil, which is rather less than four miles distant, the existence of a cause is not only theoretically but practically apparent. In the neighbourhood of the Ravine there, remittent fever does occasionally affect the residents, and has, during some seasons, assumed a severe and fatal form, as in 1821–'22, 1827 and 1833.

"Now, if the fever that raged among the Eclair's crew was primarily the remittent of the African coast, aggravated by circumstances to an unwonted degree of malignancy, it is quite reasonable to believe that a fever of equal intensity might be grafted on an endemic of the same nature originating in the Island of Boâ Vista, whose geographical position is within the legitimate domain of yellow fever.

"If, then, the existence of a practically efficient, as well as of a probable cause of fever on the island be admitted, it now only remains to be seen whether there is reason to suppose that either was in operation at the period in question, for if such were the case, the arrival and stay of the Eclair at Boâ Vista, with fever among her crew, and the almost cotemporaneous occurrence of a similar disease on that island, can only be regarded as mere coincident events. If, on the other hand, it does not appear that any local cause of disease was at this time in action, either on the small island or on Boâ Vista itself, and if the subsequent history of the fever proves it to have been capable of propagating itself, then, under all the circumstances, there will be strong grounds for concluding that the visit of the Eclair, and the invasion of Boâ Vista by fever stand in the relation of cause and effect.

"While the Eclair was at Boâ Vista there was occasional rain, and the thermometer ranged from 80° to 84°; it does not, however, appear that the flat behind Porto Sal Rey was inundated until after the fever broke out in the town. Dr. Almeida, while he admits that remittent fever occurs in some seasons at Rabil, declares that he never knew it to originate at Porto Sal Rey, and his experience extends over thirty-seven years. The same gentleman asserts that the island was quite healthy until some time after the departure of the Eclair, and in this he is borne out by all with whom Dr. McWilliam communicated on the subject. Mr. Macauly says that 'Boâ Vista was free from any kind of sickness prior to the Eclair's arrival, as well as during her stay there, and for a short time after her departure.' Again, 'Boâ Vista is a remarkably healthy place, and fevers are almost if not entirely unknown, amongst the established residents, or amongst the strangers.' And Dr. McWilliam states, that since February, 1844, neither in the family of the British Arbitrator, which consisted of five English persons, nor in the family of the British Consul, which consisted of eight English persons, nor in the Doctor's family, which consisted of six English persons, nor among the other English residents, did a single case of fever occur, prior to the appearance of the disease to which the report before us specially refers. The instance of the consul's family is a very strong one, for they had lived in the island for seven years, without suffering in the smallest degree from the climate."

Dr. McWilliam was unable, after the most minute and repeated investigation at Porto Sal Rey, Rabil, Estacia, as well as the eastern villages, to discover that there was disease of any kind on the island, until after the arrival of the Eclair. If, to testimony such as this, be added the fact that Moradinha, which is situated in the Rabil ravine, and Estacia de Baino, which overlooks it—both of which places have always come in for a great share of remittent fever, whenever that disease was prevalent—were, in a most unaccountable degree, exempt from fever during the epidemic to which the present report refers, then it must be evident that no apparent source of the disease is to be found on the island, but must be looked for among the sick crew of the Eclair.

If, then, the absence of all local cause on the small island, and the identity of the disease which proved fatal to the two European soldiers at the Fort soon after the departure of the Eclair's people, and that which occurred in the crew of that vessel, be admitted, the necessary conclusion is, that the fever was propagated to the soldiers, either directly by contagion from the bodies of the sailors, or by an infectious matter left in the room which had been occupied by the sick crew. The same reasoning applies to the Island of Boâ Vista, to which it seems, beyond any doubt, that the fever was conveyed by the negro soldiers, and by them transmitted to the female and their other visitors at Pao de Varella. The disease was for some time confined to these visitors, and to the immediate neighbourhood where they lodged, and it is remarkable that the only two Europeans inhabiting the same row of huts with the soldiers both died of the fever. From Pao de Varella the fever can be traced through sources of infection to the lower part of Porto Sal Rey, eventually including nearly the whole of the population that remained in the town.

At Rabil the case was the same as at Porto Sal Rey. A labourer on board the Eclair—and who was very strongly suspected of having had in his possession a coverlet and blanket from the fort—was taken ill at Maradinha, and remained there some days in a house of a person who, together with his wife, was attacked with fever three weeks afterwards. The labourer was carried to his own house in Cabeçada, where there was not a single case of disease of any kind. In a short time his whole household, consisting of his wife and three children, were attacked, and speedily fell victims to the fever. From this house, as from a central point, the disease spread in all directions, more especially to the southwest and most densely populated part of the village.

When the disease extended to the villages near the eastern and western extremities of the island, and had to traverse miles of uninterrupted waste of sand and rock before reaching a place of destination, its march became still more clearly defined. At Estacia the origin of the disease was distinctly referable to the arrival of a young man, and his sister, in a sickly state from Rabil, where the disease was raging; from the house in which these two persons were lodged, and from that occupied by a man who about the same time came from Porto Sal Rey, the fever spread over the whole of the village. In Cabeçados, Tharafes, Fundodas Figueiras, and Joao Gallago, the disease could in each case be clearly traced to one or two individuals coming from an infected district, and affecting first the inmates of the house they remained at, next the visitors, and gradually extending thence over the whole of the inhabitants. In fact, in each town and village on the island the disease first appeared in a single house, which became an irradiating focus for its dispersion in all quarters.

The exemption of persons who removed in time from infected places was clearly shown in many instances. Dr. Almeida, by changing the residence of his family from place to place, succeeded in keeping the whole of them intact. The same gentleman for some time prevented the introduction of the disease into Fundodas Figueiras, by the establishment of a sanatary cordon; and afterwards retarded its progress by the imperfect means of segregation of the sick which he had in his power. Boaventura was for some weeks without a case of fever, although the disease was raging in Cabeçada, a few hundred yards only from it, by the adoption of measures to prevent intercourse.

From the above statements it is evident that the fever at Boâ Vista possessed the properties which are usually attributed to a contagious disorder, and connecting this fact with the time and circumstances of the seizure of the soldiers at the fort by fever, and of the appearance of the disease in Porto Sal Rey, will leave little doubt of its introduction into the island by the Eclair.

"Of the 87 persons employed on board, in the launches, and at the coal heap, on the island, ten died; a rate of mortality not great, but considerably beyond the average rate of death of the native population of the island. Most of the labourers on board went below, and those at the coal heap had free intercourse with the healthy portion of the crew, who were living, it may be said, with their sick shipmates. Yet in one case only was a labourer connected with the Eclair, the first person attacked in any of the villages, and none of the washerwomen were among the first attacked in Porto Sal Rey. Facts such as these would indicate that the fever only propagated itself to those who approached others under its influence. The case of the labourer forms, however, a marked exception to this, as in his case the medium of infection seems to have been either something in the ship while the sick were on shore, or some of the healthy crew, or possibly the clothes which he is supposed to have obtained surreptitiously from the fort. He was, indeed, on board when the sick were brought from the island, but so were also nearly the whole of the labourers. In other respects the case of this person is invested with much interest, from the fact of his having been attacked as early as the 17th of September—his being carried to his own house in Rabil, where, after a long but not violent attack, he recovered, but lost the whole of his family from fever, and from his house being the nucleus from which the disease spread over Cabeçada.

"There was no fever on any of the other islands, except at St Jago, where there was the common endemic remittent, which prevails there every season, during and after the rains. There was no unusual amount of disease at Sierra Leone, the Gambia, or any other part of the coast visited by the Eclair. In short, there was no malignant fever anywhere on the African Coast, or among the islands, except in the Eclair and at Boâ Vista.

"The whole of the Cape de Verde islands are within a few hours sail of each other with the north-eastern trade wind, which blows in this quarter, with very little variation, throughout the year. Now had the disease depended upon a general vitiation of the atmosphere over the whole group, it is not reasonable to suppose that all the islands would have escaped excepting Boâ Vista."

Dr. McWilliam found it impossible to ascertain, with any degree of accuracy, the number of persons attacked in the several villages; but from the best information he could obtain, presumes that about two-thirds of the whole population of the island were affected by the fever. The fatal cases terminated generally with the same symptoms as those presented by the girl who died on the 1st June at Moradinha. Remittent and intermittent were much less common among the convalescent who were seen by Dr. McW. on his first arrival, than he had expected; they were generally very slight, and benefited much by quinine. This state of debility was, Dr. McW. believes, greatly owing to the famine under which the people had for some months been labouring; a circumstance which, doubtless, not only retarded convalescence in a great many cases, but, in all probability, considerably added to the rate of mortality.

Of second attacks, Dr. McW. could only find five cases at all clearly established; from the little appreciation that the people have of time, it is not possible to arrive at the exact intervals between the attacks.

With regard to the protective power of a first attack against a second, Dr. McW. states that the natives, not naturally brave, had no hesitation,

after having passed through the fever, to enter freely the houses of the sick, and a Spanish carpenter and a cigar maker, who had both had fever with black vomit, in the Havana, visited, with impunity, nearly every sick person in Porto Sal Rey, and also assisted in sewing the dead bodies up in sheets. A Portuguese gentleman attributed his immunity from fever, while he was attending his son on his death bed, to having had the disease at St. Domingo, in 1817.

In estimating the mortality from the fever at Boâ Vista, the fact of the sick having been, for a considerable time, without any medical assistance whatever, must be taken into consideration. Dr. Almeida, the resident physician, went from Porto Sal Rey to the country, on the 19th of November. Dr. Kenny died on the 27th of November. The surgeon of the Governor-General left the island on the 1st of December, and MM. Moraes and Leao, surgeons in the Portuguese Navy, did not arrive from Lisbon until the middle of February, 1846.

The treatment adopted by Dr. Almeida and the Portuguese surgeons, was very simple. They rarely bled from the arm, but sometimes cupped. Blisters were applied; diaphoretics and antispasmodics administered internally. But the remedies chiefly relied upon were quinia, mild purgatives, and enemata. Mercury was not exhibited in any form. Great dependence was placed upon quinia in checking vomiting, whether bilious or black.

How is the reappearance of the fever at Moradinha to be explained? During the prevalence of the disease, there was one case here as late as the 24th of March. Was not the interval between this and the subsequent occurrence of the disease on the 20th of May, sufficiently long to extinguish the virulence of the poison? or is it not more probable that the female who returned to that place a few days before she was attacked, had imbibed the poison in one of the houses of the eastern villages, where there were many persons in a state of convalescence only early in May, although there was no one confined to bed with fever later than the end of April. If the latter suppositions be correct, this forms a second case in which the disease appears to have been communicated without direct intercourse with the sick.

The main conclusions, from a review of the whole of the circumstances that have been brought under my notice, remarks Dr. McWilliam, in relation to the disease at Boâ Vista, seem to be—

"First, That the fever on board the Eclair was primarily the remittent of the African coast, which is not a contagious disorder, but that the disease acquired contagious qualities in virtue of a series of causes.

"Second, That although there exists, on the island of Boâ Vista, a physical cause capable of producing remittent fever, yet it does not appear that that cause was in action when fever broke out in September, 1845, and that the island was quite healthy when the Eclair arrived there.

"Third, That the disease of which the Portuguese soldiers died at the fort, on the small island, was that which afterwards ravaged Boâ Vista, and the same as that which prevailed among the crew of the Eclair.

"Fourth, That the fever was propagated throughout the island almost exclusively by direct intercourse with the sick, there being only two cases in which there appears any probability of persons having been infected in any other way.

"Fifth, That although those who had passed through the fever were much less liable to the disease than those who had not, yet it would appear that a person having had one attack, possesses no absolute protection against a second attack.

"Sixth, That connecting the whole of the circumstances attending the arrival

and stay of the Eclair at Boâ Vista, with those under which the disease appeared on the small island, and afterwards on Boâ Vista itself, leave no doubt of its having been introduced by the Eclair.

"Seventh, That, in all probability, the mortality from fever on the island was much increased by the want of proper nourishment for the people, as well as by the total absence of medical assistance for some months.

"Eighth, That the disease had, in no case, spread to any of the other islands of the Cape de Verde Archipelago."

Upon a review of all the evidence adduced in the report before us, there cannot be a reasonable doubt as to the contagious character of the disease which prevailed at Boâ Vista, nor do we think that it will be questioned that the infection was introduced into the island by the sick landed from on board of the Eclair. What was the exact character of the fever thus introduced and propagated, until it spread over the entire population of the island, we are presented with no data upon which to form anything approaching to a decided opinion. Its phenomena, invasion, progress, and duration, are not detailed in such a manner as to convey a clear idea of its nature, or to enable us to compare it with the other fevers prevalent in warm climates. It is true that we are told that the disease, when it first appeared on board the Eclair, was, in the opinion of Dr. McWilliam and the medical officers of the ship, the ordinary remittent fever of the African coast; that there was "no proof that the fever in question was in any degree contagious before the vessel reached Boâ Vista;" and "that the contagious properties which marked the Eclair fever at Boâ Vista, were acquired or contingent, and not primarily or essentially belonging to it." As Dr. McWilliam frequently designates the fever at Boâ Vista as the yellow fever, he must be understood as maintaining the position that the remittent fever may, by a combination of morbific causes, become converted into the yellow fever—this he, in fact, states, in so many words, namely, "that from the endemic remittent of the African coast, the disease had, from a series of causes, been exalted to a concentrated remittent, or yellow fever."

To say nothing of the improbability of a disease, which it is acknowledged not to be contagious, even in its most virulent form, and in the places where it prevails as an endemic, assuming, under any circumstances, so decidedly a contagious character as was evinced by the fever at Boâ Vista, we must protest against the position assumed in the report before us, that, under any circumstances whatever, the bilious remittent is capable of becoming converted into the yellow fever, as a pathological absurdity. The latter is a specific disease, with strongly marked characteristics that separate it, as it were, from all other fevers, while it is produced by a peculiar poison or morbific cause very different from that which gives rise to the bilious remittents of warm climates.

The supposition of Sir William Pym is much more plausible, namely, that the disease on board the Eclair, from the 3d of April to the 8th of June, was, in the words of the surgeon of the ship, "a well marked remittent;" but that, upon the 23d of July, the yellow fever broke out among the crew, one man dying, on the 27th of July, with black vomit. From the 23d of this month the disease spread rapidly, a passenger and thirteen seamen having died before the vessel arrived at Boâ Vista, many of them with black vomit, which appeared in most of the fatal cases afterwards, until the Eclair arrived in England.

But was the disease at Boâ Vista the same as that known in this country as yellow fever? Judging from the few scattered and imperfect notices

we have been able to gather from the report before us, of the character of the fever as it prevailed upon the island, taking, particularly, the histories, unsatisfactorily detailed, it is true, of the man and girl who were seen by Dr. McWilliam at Moradinha, on the 1st of June, (and we are informed that the fatal cases terminated generally with the same symptoms as those presented by the girl who died on the 2d of June, after ten days' illness); we should certainly conclude that the disease was by no means the same as the yellow fever of this country. It may have been the Bulam fever—Sir Wm. Pym states, indeed, that this was the fact—a disease which, by many of the writers conversant with the fevers of warm climates, is considered to be a distinct disease from the yellow fever, and eminently contagious.

D. F. C.

BIBLIOGRAPHICAL NOTICES.

ART. XIII.—*Practical Observations on some of the Diseases of the Stomach and Alimentary Canal.* By JAMES ALDERSON, M D., F. R. S., Fellow of the Royal College of Physicians; late Senior Physician to the Hull General Infirmary, &c. London, 1847: 8vo. pp. 215.

Dr. Alderson claims no higher character for the present work than that of the record of a series of observations, "classified and reasoned upon," so as to exhibit the sum of his own experience in reference to some of the more important of the organic and functional diseases of the digestive organs. Nineteen cases are detailed illustrative of the symptoms and pathological anatomy of carcinoma of the stomach and œsophagus, malignant ulceration of the colon, hypertrophy of the coats of the stomach—and perforation, by ulceration, of the stomach and ileum. The cases are accompanied by brief summaries and comments, in which the author has confined himself to the results of his own observations, without attempting to review the valuable contributions to the pathology of the chronic affections of the alimentary canal, lately made, by the English, French, and German physicians. In deducing inferences from his observations he has "abstained as much as possible from speculating, or propounding any new pathological opinions." So that the work is to be received simply as an exposition of his personal experience, and not as making any pretensions to the character of a complete treatise on the subjects embraced in it.

It would lead us to a very extended notice of the work of Dr. Alderson if we were to attempt to present to our readers an analysis of his observations upon carcinoma of the stomach and œsophagus—these are based upon the cases detailed, and it would not be doing him or the reader justice if they were presented without the latter. Of his general summaries some opinion may be formed from the following, which constitutes the chapter on Malignant Ulceration of the Colon.

"Malignant ulceration of the bowel would hardly be classed as a carcinomatous disease, except for the accompanying secondary deposit of encephaloid matter in the liver, as there occurs no such deposit at the seat of ulceration. The general symptoms of malignant ulceration are the same as those which accompany deposit of cancerous matter in other parts of the system. There are, the same loss of flesh, change of colour and complexion, the same cast of countenance and anxious look. The pulse and tongue are alike natural up to a late period. Where ulceration occurs in the colon, the commencement of the disease is marked by dysenteric symptoms, which appear many months before the disease approaches a crisis. The symptoms become chronic, the ulceration which gives rise to them proceeds through the coats, and as an instinctive act in the system, to prevent a rupture into the cavity of the abdomen, lymph is poured out, and neighbouring organs are agglutinated together. The lymph which is thrown out is of a smoky hue, of a melanotic tinge, and is easily torn through. The bladder in the male, and the vagina in the female, are the parts often thus involved. A shivering fit, accompanied by delirium, marks the time when perforation finds its way through the coats.

"This process of throwing out lymph, which is called instinctive, or by others preservative, is in fact more properly but a prolonged process of destruction. It occurs only in chronic disease, and where the constitution is in a failing state, and never in early life, and in acute disease, when such a restorative effort on the part of nature would be naturally looked for.

"I have notes of a case of the above disease, where malignant ulceration occurred in the sigmoid flexure of the colon, in which lymph was poured out, and a union with the bladder took place, permitting the contents of the bowels to pass

through the bladder, and the urine in turn to irritate the rectum: in this case the liver was extensively studded with encephaloid deposit. The patient had through life suffered from indigestion and from gall stones, and spasm of the gall-ducts: a large gall-stone was found in the gall-bladder.

"Ulceration may, however, take place in the cœcum, which is not of a malignant character; it is consequent upon obstipation."

The following is the author's summary of the pathology of hypertrophy of the coats of the stomach, introductory to the histories of three cases of that affection.

"It occurs less frequently than carcinoma, from which it appears to differ materially, though it has sometimes been classed under diseases of that nature, and still by many is considered as only an earlier stage of carcinoma.

"The subjects of this disease are generally between the ages of 40 and 50, and are persons who have indulged in the use of stimulants. The disease consists in a state of hypertrophy of the coats of the stomach. I have met with it only in the pyloric extremity.

"It seems to have been commenced by some effort to overcome an obstruction at the pylorus, which has tended to narrow the opening; by a sort of instinctive process the coats become thickened, and their structure added to, so acquiring additional power to perform the effort required. The disease may also be attributed to irritation, or chronic inflammation, which has not been subdued, but which, on the contrary, has been continued and aggravated by repeated indulgence in stimulants. The capillary circulation of the mucous coat is thus for a long time increased; the muscular coat partakes of the irritation, and hypertrophy is the consequence. On a section being made of the coats of the stomach, the interlacing of the fibres of the muscular coat is very apparent and peculiar. The other viscera are not affected constitutionally, and hence we are not compelled to place this in the class of constitutional or hereditary diseases. This disease is preceded by morning sickness, and want of appetite; in the latter stages the general symptoms are constant retching and sickness; great impatience for drink, which, of whatever quality, and in whatever quantity, is almost immediately rejected. Dark-coloured fluid is also vomited in large quantity. Everything taken into the stomach gives pain, and causes not only its own rejection, but also copious vomiting of vitiated secretion from the mucous lining of the stomach. There are heats and chills, and the pulse is quick, and the tongue furred. Pain is usually felt on pressure at the pit of the stomach, but not invariably; more so, probably, in cases which owe their origin to unsubdued chronic inflammation than to mere obstruction of the pylorus. Emaciation is not a symptom of the disease, and hence its absence negatively distinguishes the complaint from carcinoma."

In chapter xiii. Dr. Alderson presents a summary of his observations on the treatment of structural disease of the alimentary canal. Unfortunately, our entire ignorance of the nature and cause of most of the malignant affections of this, as well as of the other parts of the system, has prevented the slightest advance being made towards a discovery of any remedial means calculated to prevent their occurrence, or, when present, to arrest their course or effect their removal; it is evident, therefore, that, in the present state of our knowledge, a palliative treatment is the only one within our power. It is true we have, from time to time, been favoured with the enunciation of remedies and plans of treatment, to which a character little less than specific has been assigned—but we believe that the curative effects of these have only been vaunted in cases of malignant degenerations of external parts, and not in those of the internal organs. For these there has as yet been no remedy proposed.

"The first symptoms apparent in structural disease," remarks Dr. A, "simulate those of mere disordered functions, but they are in reality the consequence of the deposit, which commences a process of irritation, tending towards disorganization in the mucous membrane; in other words, they are the consequence of a certain degree of actual change of structure; it is plain, therefore, that treatment must be directed not merely to restore the healthy state of the secretions, but to counteract the constitutional state of tendency to morbid deposit; and the object to be sought for can unhappily only be—not that of perfect restoration, but—the means to retard the progress or control the advance of the development, and to prevent in

some degree threatened encroachments upon important organs. This is the utmost that hope dares to point to, and unhappily more than can often be attained.

"As soon as the symptoms fairly indicate that the disease is in the larger curvature, or in the pylorus, as we have endeavoured to show they may do before ulceration commences, and long before positive evidence is given in the form of tumour, a course of active counter-irritants should be immediately adopted. Local depletion, either at the pit of the stomach, or over the spine, may succeed in checking or retarding the irritation of the mucous coat, and blisters may be applied as near to the seat of pain as possible. It is necessary, at the same time, to discontinue all aperient medicines which tend to irritate the mucous membrane of the stomach, and to choose such as act upon the colon, since we must seek to obtain enlarged secretion from the mucous membrane of the bowels, both as a counter-irritant, and as a measure of depletion. The occasional and moderate use of calomel, unmixed with any irritating purgative, or of hydrargyrum cum creta, is a most useful adjunct. There is evidence in several ways that counter-irritation has apparent power in this disease. The appearance of gout and erysipelas seems to stay the progress for a time. In case No. 8, there is an instance of an external ulcerated tumour in the groin, which seemed to divert the course of the disease.

"Simple astringents, as lime water given in milk, and sedatives, may be usefully employed in this stage of structural disease, in the same way as if the secretions, intended to be corrected, were the result of mere disordered function. All stronger astringents should be carefully avoided. The opiates should be sparingly had recourse to, as there will be too much occasion for their aid in succeeding periods of severer trial; they may be usefully combined with alkalies, if indicated, and with hydrocyanic acid. The diet should at once be changed to avoid all irritating, stimulating food. The simple animal food which is so useful in common dyspepsia, will be too irritating for this stage; beef and chicken tea would not be objectionable, but there is generally a distaste for them. Milk is the only animal food which is generally agreeable, and it is highly appropriate. Pure air, quiet, rest from great exertion, whether mental or bodily, but especially the latter, should be sought.

"When the disease is so fully established that the mucous membrane has given way, and has become ulcerated, the treatment must be confined to sedatives and soothing remedies, and to the sedulous avoidance of anything, whether in diet or medicine, the application of which would be likely to irritate an open sore. I am, however, still decidedly of opinion that counter-irritants procure relief to the suffering, but they must be used with the utmost care, to avoid increasing the debilitated state of the patient, as the fearful loss of strength is a serious addition to the distress of pain. The counter-irritants must also not be applied to the immediate seat of the deposit; for as the disease extends more nearly to the parietes, and adhesions take place, irritation in the immediate neighbourhood may rather do harm than good, and at any rate increase the internal pain; whereas the object of the counter-irritant is not only to retard encroachment on other organs, but to divert vascular action to another part. Any part of the chest is, therefore, to be preferred; and in regard to size and continuance, the counter irritants must be carefully regulated, so as not to assist in reducing the strength. I have found blisters the best form. Antimony should be carefully avoided.

"It is highly desirable, if possible, to keep up the natural muscular movements of the canal, in order to keep off anything like inverted action, producing vomiting, but the utmost care and discretion are necessary in the use of aperients. As they have all to be in contact with an open ulcer, nothing that could be painful to a surface in such a state should be used. Mercurials give probably the least irritation when judiciously given, and in small quantities. Borax, with a view to soothe the pain from soreness of the surface, and very weak nitric acid, as tending to cleanse the impurity, may both be used as palliatives. I have seen great benefit, even at this time, from the sedative effects of hydrocyanic acid, but it is impossible to dispense with the use of morphia. With so much pain to be overcome, and so much restlessness, it is impossible to withhold such a source of comfort; and the general effect on the system is not so injurious as when there is a less fearful state of disease.

"When carcinomatous disease attacks the œsophagus and cardia, the counter-irritant plan must be avoided near to the seat of the disease, and this is more particularly to be regarded the higher the disease is situated in the œsophagus. The proximity of the trachea, and its proneness to inflammation, render the use of blisters on the throat an error always to be avoided. The power of receiving food into the stomach varies in different cases, and, of course, anything not of an irritating nature that can possibly be taken, must be permitted. It sometimes happens that a small portion of a solid substance may be forced down when fluids cannot find their way.

"The treatment of carcinomatous disease, when the deposit takes place in the neighbourhood of the stomach, but external to it, must take a wide range, having regard to the different organs whose functions become interfered with. I have already remarked on the too indiscriminate use of purgative medicines in this case, and on the general treatment, in the chapter on the disease in this form. I will only pause here to repeat that, while palliative measures are applied to each of the symptoms as they arise, those which are intended to meet the inactive state of the lower bowel, should be administered with the utmost caution and judgment. I have previously given the reasons for this caution, and I conceive that the physician's attendance can be in no way more useful than in protecting the patient from the additional suffering from the inconsiderate use of purgatives."

The second part of Dr. Alderson's treatise treats of "Some of the Functional Diseases of the Stomach and Alimentary Canal;" comprising some cursory observations on functional derangement of the digestive organs, dyspepsia, heart disturbance, functional derangements of the colon, and a view of the comparative symptoms in structural and functional diseases of the stomach.

Without pausing to criticise the accuracy of the terms functional and structural as applied to disease, especially in the sense in which they are employed by our author—believing that the meaning intended to be conveyed by them is sufficiently well understood, we shall present our readers with the comparative view presented by Dr. Alderson of the symptoms in structural (malignant) and functional diseases of the digestive organs. The description will hold good in general, and is useful in directing the investigation of the physician, but it is not so invariably accurate as to be depended upon alone as a means of diagnosis.

"*Complexion and general appearance.*—It is very difficult to describe precisely the peculiar hue of the complexion which belongs exclusively to cancerous disease, at least so as to make it at once recognizable by those who are unaccustomed to notice it. It is, notwithstanding, perhaps, one of the most distinguishing marks of the disease. It is, of course, modified by the natural complexion of each individual; but it consists in a certain dingy, sallow, exsanguious, yet opaque appearance; it is unlike the yellow tint of jaundice, or the opacity seen in states of heart disease. The eye is sunken, the adnata pearly; there is a peculiar cast of countenance, expressive more of care and depression than of dissatisfaction, and more of deep thought than of peevishness.

"In functional disease the hue endeavoured to be described is never seen; it is only in pyrosis that there is any approach to it, when there is often much change in the natural colour; the countenance in pyrosis has a pinched and dissatisfied expression, rather than one of thought and anxiety.

"*Emaciation and loss of strength.*—In structural disease the emaciation varies according to the situation of the diseased deposit. In the strictured form of disease, both of the cardia and œsophagus, it takes place to an extent not seen in any other kind of disease; when the diseased deposit is in any other situation, whether within or external to the stomach, there is still immense wasting of the flesh, though not in the same extreme degree. Loss of strength in stricture of the cardia and œsophagus is not experienced in equal proportion to the emaciation, for in this particular situation it is not unusual for patients to refer to their vigorous sensations as an argument that their cure ought to be within the reach of art. On the contrary, when the disease is within or external to the stomach, there is an extraordinary prostration of strength, exceeding the severity of the other symptoms, and due, of course, to the number of viscera which are interfered with.

"In functional disease slight loss of flesh may accrue, but the strength rallies immediately on intermission of the more distressing symptoms.

"*Pain.*—In the early period of structural disease pain is not, in all cases, present; the absence of pain, accompanied with other well known symptoms, leads to the presumption that a disorganizing process is being carried forward insidiously: when pain is present it is at the pit of the stomach, of a lancinating, grinding kind, and usually confined to a particular spot. In the strictured form pain is more acute and more defined than in the areolar or colloid.

"The functional disease is peculiarly marked by pain, which is more diffused, and intermits, coming on at intervals, according to the stage of digestion. The suffering is never of the acute lancinating character, and yields in a temporary way to the use of alkalies.

"*Vomiting.*—*Vomiting* is an important symptom in structural disease; it is to be found in some stage of the complaint, though not invariably present at all times. In the latter stages, and as the disease extends itself, the imperfect action of the muscular coat converts the vomiting into a mere act of regurgitation.

"In the functional disorder, vomiting is only present occasionally, except in pyrosis, and is plainly set up by the presence of food on which digestion has been imperfectly performed, or of vitiated secretions, and does not return as a constant symptom; there are sometimes regurgitations of undigested food shortly after eating, but they do not form any prominent symptom, and soon subside or yield to alkalies.

"*The fluid vomited.*—The dark-coloured fluid, approaching nearly to the character of venous blood, is a peculiar mark to distinguish structural disease from mere functional derangement of the digestive organs. In the latter complaint it is never present.

"*Constipation.*—In structural disease, constipation remains always present as a constant symptom. In the latter stages, and especially when the disease spreads to the colon, violent bowel attacks occasionally supervene, accompanied or not with hemorrhage. The seat of the collection is the cœcum.

"In functional disease, costiveness is a frequent symptom; but the relief obtained by aperients and purgatives is not of such mere transient benefit as in the structural. The most distressing dyspeptic symptoms arise from collections in the arch of the colon.

"*The tongue.*—In the structural disease, almost without exception, the tongue is clean, and continues so until an advanced period; the aphthous state of the tongue is usually the attendant on the later stages; it is merely to be referred to failure of power, as in other chronic diseases.

"In the functional disease the tongue is generally foul, and covered with fur; the aphthæ are, of course, not present, although there is often a slight ulcerated place here and there on the tongue, quite different from aphthæ, and to be referred to the acid state of the stomach.

"*Flatulence* is a symptom attending both the structural and the functional diseases of the stomach. In the structural it is always fetid and almost constantly rising. In the functional it gives great distress by distension, and relief is felt by its escape; it is not of the same offensive character.

"*Of the appetite.*—Though digestion is imperfectly performed in both diseases, in structural disease, as a general rule, the patient finds that he is only able to take farinaceous and vegetable food. In the functional, the patient generally finds himself better with an animal diet.

"*Examination by touch.*—Examination over the abdomen may be made freely by touch in the structural disease, without causing pain to the patient, except when pressure is made over the precise seat of the carcinomatous deposit. The pain which results from such pressure is severe and lasting, but it is confined to that particular spot. When the disease is situated within the stomach, it is described as resembling the pain which precedes vomiting. The liver is not sensible to pain on pressure, unless the tubera be raised above the convex surface, and are vascular. When the tubera are thus elevated, they can be detected through the parietes when the patient is thin. In the functional disease, there are times when pressure anywhere over the stomach and upper part of the abdomen produces pain. The patient feels a dread of being touched, as the pain felt on

pressure arises from the inflated state of the stomach and bowels, percussion carefully made will give evidence of the nature of the case.

"*Progress and development of the disease.*—The structural disease comes on so gradually and insidiously, that the patient is often unable to give a history of the very commencement of his illness; and cases have occurred in which a considerable state of disorganization has taken place before the attention of the patient has been directed to his condition by any train of tangible symptoms.

"In functional disease, symptoms of the derangement of the digestive organs force themselves very early on the feelings and attention of the patient, and the magnitude of the suffering seems to exceed the actual amount of disease, and the patient presses his symptoms earnestly, and dwells minutely on the circumstances of his case."

The diseases of the colon, and the influence exercised upon the general health by the disordered states of this organ, have not received that attention which their importance, as well in reference to prognosis, as to a proper direction of our curative measures, in certain painful and otherwise distressing affections vaguely referred to derangement of the digestive organs, demands. The chapter upon the functional derangements of the colon, in the work before us, contains a few judicious hints in reference to the subject, but it is far too vague and incomplete to be received as an exposition of the functional diseases of that organ, or of their direct or reflex action upon the functions of other organs, whether neighbouring or remote. A few extracts from it may serve as useful hints to those who have the inclination and opportunity for a more extended investigation of the subject.

"To review all the diseases of the colon," remarks Dr. Alderson, "would be to recapitulate nearly the whole train of dyspeptic symptoms. While referring to the means for immediate relief in nearly all the forms of dyspepsia, I have remarked that the use of aperients, by acting freely on the colon, can alone reach the final cause: it is of course highly desirable to select such medicines as act peculiarly on that organ. When the colon is obviously the point of derangement and the seat of pain, and the more prominent symptoms are not those of mere dyspeptic character, accumulation to a very considerable amount, accompanied with a large evolution of gas, generally exists; this constitutes the complaint, especially colic, which is a frequent cause of very severe suffering. Collections in the cœcum are not felt to be so distressing, as regards dyspeptic symptoms, as when they take place in the arch: the cœcum is so bound down by membrane, and so preserved in its natural position, and it is also so supported from the effects of gravity by lying on the side of the pelvis, that it is only from distension that pain is felt in this part.

"The cœcum being out of the current appears to be the natural depôt where collections to some extent are intended always to exist. There may be especial reasons for this delay, for, though we are unacquainted with the peculiar function of the appendix, it is more than probable that some change takes place at this point, for which delay is necessary. The cœcum is also situated more out of the reach of other organs, and less likely, by its state of distension, to interfere with them. The mere collection, therefore, of matters in the cœcum is not necessarily a cause of colic, unless, by a too long continuance of the contents, decomposition or fermentation take place, and gas be evolved, which is pent up by some accumulation further on in the canal.

"The kidneys and the bladder, from juxtaposition, are often much irritated during attacks of colic; but as these affections are but secondary, they subside on relief being obtained from the colic. A long list might be presented of distressing symptoms, the cause of which is traceable to a disordered state of the colon, and all of which are, in their turn, sometimes supposed to be either primary diseases, or symptoms of serious disorders. Epilepsy, loss of power, approaching to paraplegia, pains simulating rheumatism, cramps and spasms in the limbs, and many others. All these may occur in consequence of nervous irritation set up in the colon, and communicated to the brain and spinal marrow. A single attack of epilepsy is sometimes induced by this irritation in younger persons, who are not afterwards subjected to it; and in others who are habitually epileptic, irritation of the canal, more particularly of the colon, multiplies the number and increases the severity of the attacks.

"It is obviously not intended by nature that collections should take place in the arch of the colon in the same way that they do in the cœcum; it is not supported in its position as the cœcum is, and therefore its weight, when fully loaded, conveys an uneasy sensation; this is described by patients as of a dragging kind, and as if there were a separation between the stomach and bowels; thus, while the cœcum, which is intended to act as a depôt, retains its contents without uneasy sensations, the arch immediately gives notice, by pain, of the presence of accumulation, for which it was apparently not constructed. There is also experienced a pain beneath the left shoulder-blade, which is relieved by pressure, which I should refer to the external respiratory nerve through the medium of the stomach. As the colon extends itself across the body in the vicinity of the stomach, collections in the arch interfere mechanically with it, and we find all those true dyspeptic symptoms which we have noticed as coming on when the stomach is empty, and in a disordered state. It is chiefly when the arch of the colon becomes obstructed, and the functions deranged, and continuance of the disordered function has given rise to pyrosis and many other forms of dyspepsia, that those difficult cases arise which, without due caution, may be mistaken for structural disease: the large and continued amount of pain, the variety of distressing sensations, similar to many which accompany organic disease, and the fulness in the abdomen, which is distinguishable even to the patient, often lead to a false impression, if not in the physician, at least in the mind of the patient. In these cases it is sometimes difficult to make it understood that so much suffering and disturbance can proceed solely from a cause which appears to be so inadequate to the result; and it is also, in consequence, difficult to persuade the patient to follow up a line of treatment which requires some degree of resolution and perseverance."

After giving the details of a case in exemplification of the mischief from the want of a proper use of aperients, Dr. Alderson remarks:—

"I must guard myself from the possible imputation of being the advocate of a continual indiscriminate use of purgative medicines. Not only is such a habit injurious to the healthy tone of the digestive organs, but in reference to the colon it may be persevered in, while the actual cause of irritation, which is intended to be removed, may remain unapproached. The peculiar construction of the colon admits of a passage along the course of a channel, the sides of which consist of so many loaded cells; thus, though there is action of the bowels, the disturbing cause may still remain, and can only be fully dislodged by a change of aperient and other remedies. It is the property of certain medicines to act especially on certain parts of the intestinal canal, and a too frequent use of these may allow accumulation in parts which they do not directly affect. It is a most useful hint to those who are compelled to the use of frequent aperient remedies, that the same medicine which has been found satisfactory, and has only lost its effect by frequent repetition, will regain its efficacy if the period of the day be changed, thus presenting it to the stomach and bowels when the organs are in a different state of rest or repletion; and this change is perhaps better than increasing the dose or altering the medicine to anything more active. I would also not be supposed to affirm that the most efficacious course of medicine could alone restore the tone of the digestive organs after they have become thoroughly deranged. A variety of sanatary rules should accompany the treatment, according to the peculiarities of the case; and it frequently happens that a change of air and scene is indispensable to the recovery after every other wise and prudent measure has been adopted."

The work closes with some general remarks on the practical results to be derived from the accurate diagnosis of structural and functional diseases, and the capability of deciding at what particular period the treatment should cease to be directed towards a cure—at what time energetic treatment should be desisted from, and protective and palliative, having in view only to procure comfort and avoid reducing the strength, resorted to.

The forms of disease referred to in the several chapters of the essay, are illustrated by some prettily drawn and coloured lithographs. D. F. C.

ART. XIV.—1. *Annual Report of the Medical Superintendent of the Temporary Provincial Lunatic Asylum, at Toronto, (Canada West,) from* April 1st, 1846, *to* March 31st, 1847. Toronto, 1847.

2. *Thirtieth Annual Report of the State of the Asylum for the Relief of Persons deprived of the Use of their Reason.* Philadelphia, 1847.

3. *Report of the Superintendent of the New Hampshire Asylum for the Insane, for* 1846, 1847. Concord, 1847.

4. *Twenty-sixth Annual Report for the Bloomingdale Asylum for the Insane.* New York, 1847.

1. OUR brethren in Canada are beginning extensively to participate in the interest for the Insane, which prevails in their father-land, as well as in the United States. A commodious asylum is in progress at Toronto, and, meanwhile, the patients suffering under mental disorder are accommodated in temporary buildings. Dr. Walter Telfer is the Medical Superintendent.

From the report before us, which we believe to be the first that has been published, the following statistics are extracted:

	Males.	Females.	Total.
Remaining in the Asylum, 1846	55	36	91
Admitted during the year	76	47	123
Whole number during the year	131	83	214
Discharged or died	60	22	82
Remaining March 31st, 1847	71	61	132
Of the patients discharged, there recovered	37	14	51
" " died	10	1	11

Causes of Death.—Phthisis pulmonalis, 4; exhaustion, 2; epilepsy, 2; scarlatina, 1; delirium tremens, 1; "a decline for several years," 1.

Four cases of delirium tremens were included among the admissions.

An idea of the department for the better class of patients at this institution, may be obtained from the following extract:

"In consequence of the great increase of the number of patients, the government allowed the east wing of the parliament house to be used as a branch establishment, in addition to the former house. This additional building was well furnished; and about fifty of the best conducted patients were removed to it in July last. This house has the important advantage of exhibiting no appearance of a place of confinement, looking more like a boarding-house, or private residence. All the bed-rooms are furnished with wash-stands, basins, looking-glasses, brushes, combs, indeed, everything that is usually found in a respectable boarding-house, and the breakage is not greater in proportion. The table is furnished with good, plain, nutritious food, and a knife and fork given to each patient. The males and females, who occupy different parts of this building, have also separate apartments assigned to them for their meals,—the whole of each class sitting at the same table. The greatest quiet and order prevail throughout the establishment."

Intermittent fever is not unfrequently the cause of mental alienation. The following remarks, in reference to three cases of this kind, may be of practical utility.

"I would here refer to the case of three patients, who, previously to their becoming insane, had been labouring under intermittent fever; after becoming insane, and during the early part of their residence in the Asylum, no symptom of that disease appeared. But, suspecting from their previous history, that this disease might still be connected with their insanity, as the latent cause, they were put under the proper treatment for intermittent fever. The insanity began to decline, and, with its gradual disappearance, the original disease again manifested itself in the usual symptoms. Ultimately, complete restoration to health of both body and mind was effected."

2. At the Frankford Asylum, on the 1st of March, 1846,

	Males.	Females.	Total.
The number of patients was	25	25	50
Admitted in the course of the year	18	27	45
Whole number during the year	43	52	95
Discharged or died			37
Remaining Feb. 28th, 1847			58
Of the patients discharged there were restored			19
" " " died			6

Causes of Death.—Disease of brain (paralysis), 1; marasmus and inflammation of the bowels, 1; marasmus, 1; abscess of the liver, and inflammation of the bowels, 1; suicide, 1; bronchitis, 1.

The following remarks in reference to incurables are extracted from the report:

"Under the influence of a system of salutary discipline and uniform kindness—embracing close attention to their moral and physical wants—we have the satisfaction of seeing many of these improve in bodily health, and in the use of their mental powers, and become comparatively happy and contented members of the family.

"The most difficult part of our duty towards this class, is to provide them with occupation of a kind suited to their enfeebled capacities. Many, when in health, having never been accustomed to active labour, are not willing, (and some are unable,) now to engage in it. In summer, however, they extend their walks to considerable distances, engage in some light employment on the farm, or amuse themselves in the open air. It is in winter, when they are almost entirely debarred from these pursuits, that the difficulty is most felt, and these patients are more apt to become discontented, and their disease to undergo a change for the worse. To obviate this difficulty in part, a school was established two years ago on the female side of the house, which has been attended with most gratifying results, and within the last three months, one has been opened among the men, which is attended two or three hours daily, by from ten to twelve of the patients, and, for the short time that it has been in operation, the improvement in the habits and conduct of some who attend it, has been highly encouraging. Some show a fondness for the books, maps, pictures, &c., who before seemed to take no interest in anything, one man writes correctly whatever is dictated to him, though apparently in a condition of complete imbecility, not having answered a question, or scarcely spoken a word for some years; another reads aloud, and seems pleased with his performance, who could never previously be induced to look into a book. For the demented and imbecile there seems to be nothing calculated to excite attention, and to call into exercise the remaining faculties, to greater advantage, than the school."

3. From the report of the New Hampshire Asylum, the second which has been issued since Dr. McFarland became its superintendent, we learn the following particulars of the medical history for the last official year.

	Males.	Females.	Total.
Number of patients May 31st, 1846	56	42	98
Admitted in the course of the year	43	46	89
Whole number	99	88	187
Discharged or died	45	42	87
Remaining, June 1st, 1847	52	48	100
Of the patients discharged there recovered	20	28	38
" " died	3	6	9

Causes of Death.—Marasmus, 3; consumption, 1; paralysis, 1; effects of copious bleeding before admission, 1; disease of heart, 1; apoplexy, 1; not stated, 1.

From some judicious and well written remarks upon the causes of insanity, we make the following extract.

"From the past year's experience, and especially from the records of preceding years, it appears that an undue concentration of the powers of the mind upon

one subject, to the exclusion of that diversity of thought so essential to the health of the mental faculties, has been prominent among the special causes of insanity.

"If the brain be in reality a congeries of distinct organs, having for their object the elaboration of thought, no more surprise could be manifested that the constant effort to solve the mysteries of one subject, and thus keep in long continued and severe action, one class of mental faculties, should produce insanity, than that the muscles become fatigued by over exercise.

"No cause has contributed to send to this institution, especially in former years, more cases than the effort of minds of limited capacity to comprehend subjects which more vigorous and better disciplined minds pass as incomprehensible. To a brain of good development, the study of abstruse subjects is doubtless an exercise not only harmless in its effects, but even calculated to give the mind additional vigour, while to a mind little indebted for natural strength, and uncultivated by the necessary disciplines, such exercises, uninterruptedly pursued, frequently produce insanity.

"The philosopher in Rasselas, who, from long continued study of Astronomy, fancied that the sun and stars revolved only at his command, and the clouds discharged their rain at his bidding, is a correct portraiture of this form of mental derangement. While nothing in these facts should have the effect to lessen the zeal of any in the pursuit of even the higher grades of study, they should tend to produce such a diversity in the range of thought, that no undue burden should be laid upon any of those individual faculties of the mind, which, being the only monitors of their own condition, give no warning of any of the dreadful evils which follow their over exercise.

"More especially should these considerations have weight in the study of the all-important truths of Holy Writ. As this class of studies is most engrossing, from its importance, and opens so wide a field for speculative inquiry, so the delusions which arise from ill-directed research, engraft themselves most forcibly upon the imagination. To a young person of nervous temperament, the mischief which arises from an ill-balanced exercise of the higher aspirations of our nature, is too frequently accomplished, before its approach is perceived."

4. At the Bloomingdale Asylum for the Insane,

	Males.	Females.	Total.
The number of patients Jan. 1st, 1846, was	60	57	117
Admitted during the year	75	58	133
Whole number during the year	135	115	250
Discharged or died	60	59	119
Remaining, December 31st 1846	75	56	131
Of the patients discharged there recovered	29	25	54
" " " died	10	3	13

Among the admissions, there were thirteen cases of delirium tremens, and habitual intemperance; and among the cures there were ten of the same class.

Three patients, nearly well when they left the Asylum, recovered soon afterwards.

Causes of Death.—Puerperal mania, with exhaustion from high excitement, 1; consumption, 1; chronic insanity, terminating in diarrhœa, 1; marasmus, 3; epilepsy, 1; paralysis, 1; general paralysis, peculiar to the insane, 5.

The following extract from the Report may possibly be beneficial, by tending to impart more accurate views in regard to the curability of Insanity.

"It is a pertinent and truly instructive fact, that at the Retreat, near York, England, an institution where provision is made for retaining every patient sufficiently long to make an entirely satisfactory trial of his curability, more than *thirty-five of every hundred that were cured, did not recover until after they had been in the Asylum more than a year.* This is a striking comment upon the practice, so prevalent in this country, of removing patients from the institution in which they are placed, if a cure have not been effected in the course of a few weeks, or months—a practice which, in numerous instances, has been fatal to the welfare of the patient, entailing upon him perpetual insanity, and upon his friends permanent affliction." P. E.

ART. XV.—*Illustrations of Medical Botany; consisting of Coloured Figures of the Plants affording the important articles of the Materia Medica, and descriptive Letter-Press.* By JOSEPH CARSON, M. D., Professor of Materia Medica in the Philadelphia College of Pharmacy; Member of the American Philosophical Society, of the Academy of Natural Sciences of Philadelphia, Fellow of the College of Physicians, &c. &c. The Drawings on Stone, by J. R. Colen, No. 2. Philad., Robert P. Smith, 1847: 4to.

As we have heretofore noticed the first part of this work in favourable terms, it may be sufficient to state that the present portion of it justifies what was then said as to the beauty of the illustrations, and value of the accompanying text. This part, like the former, contains twenty plates. Quassia amara; Q. excelsa; Acacia Arabica; A. catechu; Hæmatoxylon Campechianum; Cassia fistula; C. lanceolata; C. obovata; C. elongata; Copaifera officinalis; Myrospermum peruiferum; Glycyrrhiza glabra; Astragalus verus; Gillenia trifoliata; Cerasus serotina; Eugenia pimenta; Eugenia caryophyllata; Punica granatum; Citrullus colocynthis; and Momordica elaterium.

We do not agree with the author in considering the first two of these plants as belonging to the Genus Quassia, for although the sensible properties are the same in both, their botanical characters and general appearance are distinct and marked. In Quassia the style is undivided, and the fruit consists of fine black drupes, whilst in Picræna, in which the second species is placed by modern writers, the style is trifid, and the drupes are from one to three, but usually the latter number. The remarks on the Sennas are deserving of attention, fori although they do not fully elucidate this perplexing question, they throw much light upon it. Dr. Carson does not state why he has figured the Elaterium as a Momordica, and not as the type of Ecbalium, and at the same time has included the Colocynth in Citrullus, and not in Cucumis, when it has been shown that Ecbalium is far more distinct in its botanical and physical characters from Momordica, than Citrullus is from Cucumis.

In conclusion, we gladly reiterate what we formerly said of the merits of this work, and strongly recommend it to the attention of the profession.

R. E. G.

ART. XVI.—*Fifth Annual Report to the Legislature relating to the Registry and Returns of Births, Marriages and Deaths in Massachusetts. For the year ending April 30th,* 1846. By JOHN G. PALFREY, Secretary of the Commonwealth.

IN this report the number of births, marriages and deaths returned from most of the townships in the Bay State, are exhibited with the population as shown by the Census of the General Government in 1840. These returns are more full than those made in former years, showing that the obstacles to the fulfilment of the law are gradually yielding. There is one matter connected with this subject which gives us much surprise, namely, the absence of returns from the city of Boston, comprising not far from one-seventh part of the whole population of the State. When, in our last notice of these reports, we adverted to this chasm, we little thought that it would ever appear again. Such an omission seems truly strange and unaccountable, we might add, discreditable.

Appended to the tabular statements are copious extracts from communications of the town-clerks, showing the condition of the registration through the State, the practical operation of existing laws on the subject, and the views of the town-clerks in regard to such amendments as may be needed to improve the system. These are well worth the examination of persons interested in the registry system, as showing where the obstacles to its being carried out exist. The American Medical Association has a standing committee, one of the duties assigned to which is that of taking a general charge of the subject of registration in the different States, and reporting annually to the Association. The members of this committee will do well to give the remarks of the town-clerks an attentive perusal, since they must afford them many useful suggestions of a practical nature.

G. E.

ART. XVII.—*Summary of the Transactions of the College of Physicians of Philadelphia.* From Dec. 1846 to April 1847 inclusive: pp. 72, 8vo.

THIS number of the proceedings of the college contains even more than the usual amount of interesting matter, and shows that the members of the college are zealously occupied in extending the bounds of our science. In addition to an interesting annual report on meteorology and epidemics by Dr. J. W. Moore, and a very valuable one on the Diseases of Children by Dr. Condie, there are contained in this number some instructive cases communicated by Drs. Hallowell, Meigs, &c.

Every contribution to our knowledge of tubercular diseases is so useful, that we give the following summary of two cases, illustrative of the natural history of that affection communicated by Dr. Hallowell.

CASE I.—A child aged two years and three months, of slender habit, born of healthy, but somewhat emaciated parents, is attacked with measles. This attack is succeeded, after a short interval, by one of bronchitis, of six weeks' duration; the cough, which existed during the measles, having never altogether ceased. Recovering from it, it is found that the child has lost flesh, and has a short dry cough, which was not noticed before. These symptoms continue during a space of fifteen months, when remittent fever prevailing to a great extent, it is attacked with that disease; the physical signs of bronchitis, however, exist in a marked degree, and continue during the whole course of the affection. Two months after ecovery from this attack, which lasted a month, it is seized, for the first time, and suddenly, with symptoms of meningitis; the most prominent and characteristic of these signs, are severe pain in the head, and vomiting. The pain in the head continues to increase; slight twitchings of the limbs are noticed, followed by strabismus. To these symptoms succeeds coma, which takes place one week after the commencement of the disease. The following day slight convulsive movements of the left arm are observed: these are somewhat increased on the succeeding day, when the right arm becomes rigid. There is also rigidity of the left ankle joint; the respiration on this and the preceding day, is found to be rude over the whole of the chest, and there is more or less dullness on percussion. These symptoms are followed by a slight amendment, and death finally ensues in about ten days from the time when she first complained of severe pain in the head. The autopsy displays the existence of extensive tuberculous disease. Tubercles are found throughout the lungs, the tissue of which, with the exception of the middle lobe of the right, is red and firmer than natural, but still crepitant to a certain degree. They are found deposited in great abundance, not only in their tissue, but upon the surface beneath the pulmonary pleura, and also beneath the pleura, lining the ribs, but to a small extent. The pleura, in neither of these situations, exhibits any signs of inflammation, except upon the opposing surfaces of the upper and middle lobes of the right lung, which are adherent. The bronchial glands are much enlarged and tuberculous. Tubercles are also found beneath the peritoneal investment of the liver, which presents no sign of inflammation. They are deposited beneath the peritoneal coat of the spleen, and imbedded in its substance: they are found also in the sub-peritoneal tissue of the large intestine, to a limited extent. In the brain they are seen beneath the arachnoid, both upon its convex surface and base; they exist also beneath the arachnoid lining the dura mater, where they are few in number, and isolated for the most part. The arachnoid, in the latter situation, presents its natural appearance, being perfectly pale, and not in the least altered in structure. No trace of inflammation is observed around the granulations, or in their vicinity. The arachnoid of the brain is opaque, owing to the deposit of a milky fluid in the cellular tissue beneath; but is not evidently thickened. The pia mater is greatly injected; less upon the base, where the tubercles are less abundant, but to a much greater degree where the deposit is extensive, viz: in the left fissure of Sylvius; on the surface of the anterior and middle lobes of left side, and more especially on the inner surface of the left hemisphere, and on the convex surface of the posterior lobe of the right. The substance of the brain is healthy.

CASE II.—A child aged seven years, delicate from infancy, enjoys good health until the age of fourteen months, when she has an attack of summer complaint,

with bloody stools lasting three months; two years after, she has an attack of intermittent fever, of three weeks' duration, and in about a year after is affected with varioloid. At the age of four years and a half, she has an attack of pleurisy, for which she is under medical treatment four weeks; during convalescence she is observed to complain of pain in her knee, and shortly after of pain in the hip of the same side; the pain in the knee is intermittent; when severe she is observed to flex the joint, drawing the foot under her chair, and if erect, to rest the limb upon the toes; in the intervals of the attacks of pain, she is able to run about as usual. No treatment is pursued during a space of six months from the first appearance of these symptoms; at the expiration of this time, advice is had, when cups are applied to the hip-joint, which is kept at rest, and she is actively purged with cream of tartar and jalap; this treatment is pursued about a month, when it is proposed to put the limb in a carved splint; this, however, is not done, but she is again sent to school, the flexed position of the limb being now constant; she continues at school during a space of fifteen months. When nearly six years old she has an attack of hooping cough; it continues during the summer months, and leaves her with a short dry cough, which was not noticed previously. When at school, in the autumn of 1839, she receives a fall upon the hip, after which the pain is greatly increased, and she is no longer able to leave the house. Three months after this accident, or about four months before her death, she is first observed to complain of pain in her head; the pain at times is acute, and is most severe during the paroxysms of pain in the joint. Forty days before her death, she has for the first time an attack of convulsions lasting several hours, and affecting the whole body; the pain in the head is increased after this attack, but there is no marked disturbance of the cerebral functions, and she is able to go about the house in her usual manner. For several months her sleep at night is much disturbed, and she has more or less fever every evening; the pain in the hip continues to increase until Wednesday, April 30th, when she is seized with a chill in the morning, followed by high fever and vomiting; the vomiting occurs four or five times on the two first, but less often on the two following days, at the expiration of which it ceases. Three days after the invasion of this attack, she is seized with convulsions, the left arm and leg being affected; the convulsions return at intervals on that and the ten following days, or up to the time of her death; on the 7th, the left arm and leg are observed to be paralyzed, the opposite extremity, on the contrary, being much in motion; during the first week of the attack, she takes notice of surrounding objects, and recognizes her parents; on the 9th, there is complete loss of the power of vision, which was probably the case for several days before; the hearing, however, is acute, and she replies correctly to questions that are put to her; her articulation is indistinct; but the power of deglutition is not impaired; the left shoulder and elbow joints are rigid, and the flexor muscles in a state of strong contraction; the sensibility of the left side is obtuse, and there is a slight rigidity of the left ankle joint; the other joints are supple; the pulse is frequent, irregular and intermittent; the respiration accelerated, the bowels costive; in the night she has a strong convulsion lasting several minutes, and affecting the whole body, followed by hemorrhage from the nose, after which she is unable to speak, and the power of deglutition is much impaired; the cries are less frequent, the stupor constant; on the following day, she has repeated attacks of convulsions, occurring at short intervals; after the first of these, the intelligence appears to have been completely destroyed; when questions are put to her, she takes no notice of them whatever; there is strabismus of both eyes; and the pulse and respiration are increased in frequency; the convulsions on the eleventh assume a tetanic character, the extensors of the upper extremities being thrown into a state of powerful contraction; the motions of the right arm are less frequent, its joints having become rigid, and there is a return of rigidity in the left shoulder and elbow-joints, with slight contraction of the muscles; the neck and lower jaw are also rigid; the pulse continues to increase in frequency, and is diminished in volume; there is marked oscillation of the pupils; coma profound; the bowels continue costive. Death ensues on the 12th, thirteen days from the commencement of the acute attack, characterized by fever, pain in the head, and vomiting. The autopsy presents the following lesions. The pia mater of the convexity of the brain is highly injected, the injection extending to the minutest ramifications;

the arachnoid is pale, and the sub-cellular tissue is slightly infiltrated with a milky serum; beneath it, and apparently imbedded in the pia mater, are numerous granulations, varying in size from a mustard seed to a line or more in diameter; they are more abundant, and of larger size upon the surface of the middle and posterior lobes near their point of contact; but few are seen upon the anterior lobes, where the injection is also less marked; at the base they are found abundantly in the fissures of Sylvius, to a greater extent in the left than in the right, and a few are seen upon the under surface of the middle and posterior lobes, and also beneath the arachnoid lining the dura mater; the base of the brain is but little injected; the pia mater surrounding the optic nerves, is opaque from infiltration, of a milky fluid in its tissue; the substance of the brain is somewhat injected; its consistence is normal throughout; the ventricles contain about an ounce of limpid serum. The lungs are slightly engorged, and with the exception of two very small granulations in the upper lobe of the right side, contain no tubercles; a few granulations are noticed upon the surface of the right pleura, which is adherent throughout. The bronchial glands are tuberculous, and contain a quantity of calcareous matter. The coats of the stomach present a remarkable thinness in its great cul-de-sac, and the mucous follicles are unusually developed; the consistence of the mucous membrane is diminished in the thinned portion, and there is also some softening of the lining membrane of both the small and large intestines; the mucous crypts are likewise very apparent. The mesenteric glands are enlarged but not tuberculous; the bladder contains a quantity of whitish-coloured urine, and its lining membrane is slightly injected and thrown into folds. The *liver*, *spleen*, *pancreas*, and *uterus* are healthy.

ART. XVIII.—*Report of the Committee on Medical Societies and Medical Colleges relative to the Bill proposing the establishment of an Asylum or School for Idiots, &c.*

THE honour of being the first to lead the way in philanthropic efforts for ameliorating the physical and moral condition of that unfortunate class of human beings, Idiots, whose condition was formerly regarded as utterly hopeless, belongs to the French and the Germans; and the credit of being the first on this side of the Atlantic, in the same laudable enterprise, must be awarded to the enlightened state of New York.

The committee appointed by the legislature of that state, in their report, remark that, they "feel deeply sensible of the great amount of evidence necessary to do away with the strong impression resting in the mind of every man that nothing can be done for the idiot. Such is the universal opinion of all those unacquainted with what has been done, and successfully done for their elevation. But we cannot but believe that sufficient evidence of a satisfactory character has been offered in this report, and the one made by your committee last year, to satisfy any candid mind of the entire feasibility of the project."

In our preceding number, we published a deeply interesting account, by Dr. B. Brown, of the institution for the education of idiots in Berne, and the success which has attended it. In Prussia, equal success has been met with. "So fully assured," says a late German paper, "are the Prussian government of the complete efficacy of the system, that a portion of the Deaf and Dumb Institution at Berlin, is to be set apart as an hospital for idiots, where the most effective methods of education can be tested and carried out. All were imbeciles intrusted to the care of M. Sargent: they were twelve in number. After the lapse of some months, those who could hear, were learning to speak; some were beginning to draw and write, and some to sew; others played most naturally, and sang and danced as other people; all appeared neat and cheerful, improved both in mind and body. A deaf boy, who was one of the worst cases, washed and dressed himself daily without assistance, and was learning to draw; he made his picture upon a slate, and evinced quite a passion for the employment. Most of them appeared in a hopeful way to attain ultimate restoration to the rank and society of rational beings. M. Seguin (of Paris) was also intrusted with the care of ten idiots, who were inmates of the Hospital of Incurables, and who formed the subjects of his expe-

riments. In his observations, or treatise, he gives a lucid statement of the moral and intellectual condition of his *élèves*, also accurately describing their habits. His task was an arduous one, and such as would have made many an individual shrink from attempting. He had to encounter a Babel of discordant sounds, hideous and unearthly cries, and the most determined resistance at first to control. But, in spite of every difficulty, his labours were attended with the most marked success, as the following will show in his own words. He says:—'1st. I have developed and applied, as much as the material means have permitted, the muscular system of the children. 2d. The nervous irritability of several has disappeared, or sensibly diminished. 3d. They have walked, run, jumped, and begun different gymnastics, so useful in early years to young children. 4th. They have learned to seize hold of, handle, throw, and carry burdens, the weight of which surpassed the strength of their age. 5th. Five among them have learned to read, write, count, to ascertain limit, which permits us to hope that they can still be improved by instruction. 6th. Their notions have become precise and enlarged. 7th. Ideas have begun to form themselves, and to be made manifest in their conduct and speech. 8th. Obedience and morality, which were both to be created, have begun to regulate part of their acts and of their existence. 9th. Several are sought for in the establishment to perform manual labours, in preference to older persons, and are employed to work in the gardens. 10th. During the six months, nine of my children have been severely ill, and the health of all is strengthened.' On a calm review of the labours of this excellent man, we cannot but be struck with the fact, that obstacles which formerly appeared insurmountable in the education of idiots have been overcome, and the development of hidden powers have been made apparent, to an extent quite beyond human calculation."

Dr. Ray, in an article in the *American Journal of Insanity*, gives the following account (quoted in the report), of the school for idiots near Paris.

"At Bicêtre, I spent an hour or two in the school of idiots, which has been instituted and carried on under the superintendence of Dr. Voisin. As early as 1828, Ferrus made the first attempt in France to develop the powers of idiots, which attempt has resulted in the present school of Voisin, which exhibits to the astonished and gratified spectators, a triumph of perseverance and skill in the cause of humanity, that does infinite credit to the heart and understanding of that gentleman. For many years he has directed his attention to the relation between the physical organization of children, and their moral and intellectual faculties. *He believes that every mental and physical talent, at all under the influence of the will, is susceptible of development and improvement within definite limits.* This principle he has applied to the education of idiots. For this purpose, these unfortunates have been sent, in large numbers, to this institution, and subjected to a regular course of training by Dr. Voisin, and his assistants. I found about eighty of them, from six to fourteen years old, in the school room, with their teacher, Vallee, going through the ordinary routine of their exercises. These, I observed, were frequently changed, for the purpose of calling different faculties into play, without fatiguing any, and by blending instruction with amusement, physical exercise, and agreeable impressions on the senses, the interest was constantly sustained, and the attention was kept alive. At one moment, a question in arithmetic or spelling was answered simultaneously; at another, they drew geometrical figures on a blackboard; at another, they marched around the room at the tap of the drum, beat by one of their number, and anon went through some military evolutions, rather complicated, that quite outdid the highest tactical achievements of our New England militia. These exercises were interspersed with divers games and feats of skill, such as leap-frog, fencing, jumping over a stick, &c., in which each one strove to do his best; finally, singing in unison, they left the room, and proceeded to their breakfast, whither we followed them. Here each one took his place at the table, and another song was sung, when they sat down and partook of their meal quietly and orderly. I have seen many a school of ordinary children, in which good manners and correct behavior were a less prominent trait than in this. From the breakfast room, they went to play in the yards, and thence to their respective trades and occupations; and thus, in a constant round of interesting exercises, calculated to cultivate some moral, intellectual or physical power, their time is passed. In the course of my visit, Charles Emilie, whose case is

described at some length by Dr. Conolly, came up and exhibited his proficiency, which, considering the desperate nature of his case, was certainly remarkable; on the blackboard he drew several geometrical figures as they were named to him, and again told their names when their representations in wood or card were pointed out to him. He counted, sang, and wrote upon the blackboard. His copy-book showed as much improvement as is witnessed in those of most ordinary schoolboys, and had been kept full as clean and smooth. As soon as they are old enough, they are taught a trade, and judging from specimens of their work, it was obvious they had been taught to some purpose. Some of their shoes were creditable specimens of the art."

We trust that the recommendations of the committee of the New York legislature will be fully carried out, and that liberal appropriations will be made for that purpose.

In the language of a late writer on this subject, we may exclaim, "what an amount of misery may be relieved in this our fallen world, by the establishment of kindred institutions to elevate the creature from his isolated, forlorn, and hopeless condition, to the social pleasures of life, the pursuits of science, and the advantages of education! How dignified the pursuit, to commence and co-operate in a work so great, so noble, so distinguished, which shall have for its object the expanse and growth of the intellect, from the atoms of sunk humanity, and raise the standard of the mental and moral condition, so as to render existence a pleasure, not a curse!"

ART. XIX.—*Water versus Hydropathy; or an Essay on Water, and its true relations to Medicine.* By HENRY HARTSHORNE, M. D. Ἡ δὶ τιχνὴ μακρή. 12mo. pp. 131: Philadelphia, 1847.

THE object of this publication is to inquire into the positive and proper uses of water in medicine, and the degree to which these are appreciated, and the estimation in which they are held by the profession; thus opposing the error of Preissnitz and his followers, by an exposition of the actual remedial powers of water, and of the circumstances under, and the extent to which, those powers may be made available for the cure of disease.

The plan is a very excellent one:—in carrying it out to its full extent, justice would be done to the medical profession, by showing that its members have never been ignorant of the therapeutical properties of water, but have always availed themselves of them, to a very great extent, in the treatment of disease; and that, with a more accurate appreciation of the extent of those properties, and the conditions of disease in which they are the most certainly and strikingly exhibited, the employment of water as a remedial agent, is becoming more frequent, and its importance more apparent; while, on the other hand, the perfect absurdity and dangerous consequences of trusting to it alone, as the sole and certain remedy in all diseases, would be effectually exposed, by showing in what manner water acts in the removal of disease, with the circumstances under which its remedial action may be expected to take place, and those under which no such action can be anticipated.

Of the plan proposed by Dr. Hartshorne, he has in the essay before us merely sketched the outlines, which, with more time and greater space, he would, no doubt, have filled up and completed more to his own satisfaction. His views and illustrations, though thrown together carelessly, and often loosely expressed, are in the main correct, and it is evident that had he not confined his exposition of the leading topics embraced in the proposed inquiry within too narrow limits, he would have done himself greater justice, while his general conclusion, that, namely, hydropathy is a delusion of a most dangerous character, would have been even more fully sustained. D. F. C.

ART. XX.—*Lectures on the Principles and Practice of Physic; delivered at King's College, London.* By THOMAS WATSON, M. D., F. R. C. P., &c. &c. Third American from the last London edition. Revised, with Additions, by D. FRANCIS CONDIE, M. D., Lec. Coll. Phys., &c. &c. Philadelphia: Lea & Blanchard, 1847: pp. 1040, 8vo.

WHEN it first appeared, we expressed the very high value we entertained of this work. (See number for January, 1844, p. 183.) Its merits are now so generally known, and universally acknowledged, that it would be entirely supererogatory to say a word in its praise. No work, on the practice of medicine, that has ever appeared, probably, has received so generally the suffrages of the medical press; and the rapid exhaustion of two very large editions of it, unequivocally shows the estimate in which it is held by the professional public. That it will long maintain its position, we venture little in asserting.

We must not omit to say, that the editor's additions, as might be expected from his well-established reputation and extensive experience, are judicious and valuable. He has given an account of one or two of our endemic diseases, and supplied fuller descriptions of several affections, which, being much less prevalent in Great Britain than in this country, are not so fully treated of by the author, as would be desired here; and, finally, he has pointed out such modifications of treatment, as experience has shown to be best adapted for the cure of diseases, as they occur in this country. In short, the aim of the editor has been to render the work a safe guide to the American practitioner.

ART. XXI.—*Essays, Anatomical, Zoological, Surgical, and Miscellaneous, reprinted from the Philosophical Transactions, Transactions of the Medico-Chirurgical Society of London, Dublin Philosophical Journal, Dublin Hospital Reports, Reports of the British Association for the Advancement of Science, and the Dublin Medical Press.* By ARTHUR JACOB, M. D., F. R. C. S. J., Professor of Anatomy and Physiology, and Lecturer on Comparative Anatomy in the Royal College of Surgery in Ireland, &c. &c. Dublin, 1845: pp. 174, 8vo. Plates IV.

THE name of Professor Jacob is inseparably associated with ophthalmological science, by his discovery of a new membrane in the eye, and his numerous contributions to the pathology and therapeutics of this important organ. The volume before us, contains twelve essays. Having been originally published in transactions and journals of limited circulation, the author has correctly thought that it would be useful to give them in their present form. The papers on the anatomy of the eye contain the results of dissections conducted with great care, for the purpose of removing doubts and correcting errors, and are deserving of attentive study. The essay on the diseases of the eye, as a guide in the study of pathology, is also worthy of particular attention. The aim of the author is to restore this department of surgery to its original place in medical practice, and to prove that the study of diseases of the eye is eminently calculated to improve our knowledge of the nature of disease in other parts of the animal frame, and therefore that it is a branch of medical education worthy of particular encouragement. He briefly points out the value of the information to be derived from observation of the functions of the different parts, composing the organ of vision in a healthy state, with a view to the investigation of the phenomena of life in the animal economy in general, and explains why it is that the parts of this organ are particularly suited to that object; and then shows that it is from observation of the eye in a state of disease, and especially in a state of inflammation, that information still more valuable, may be acquired.

Professor Jacob has laboured long, and, we believe, successfully to establish the importance of ophthalmic medicine, and we wish some one of equal ability would arise in this country to advocate the same cause. It is impossible, however, that students should appreciate the value of this department of our sciences, so long as they are dependent, for all their knowledge regarding it, on the general course

on surgery, in which it is farcically pretended to be taught in two or three lectures, instead of being fully developed in a separate course, as is the case in most of the German, and some of the British schools. Chelius, in the preface to his System of Surgery, says, "I must not be blamed for having omitted diseases of the eye and ear, for ophthalmic surgery has attained so great importance as to require a special treatise; and, like many other teachers, I deliver a separate course of lectures on diseases of the eye and ear."

ART. XXII.—*On Diseases of the Skin.* By ERASMUS WILSON, F. R. S., Consulting Surgeon to the St. Pancras Infirmary, Lecturer on Anatomy and Physiology, &c. &c. Second American, from the Second London edition.

IT is unnecessary to repeat the favourable opinion already expressed (number for July, 1843, p. 170), of this work; but it is proper to state, on the appearance of a new edition, that this has been much improved, and has the farther advantage over its predecessor, of being illustrated with accurate, and most exquisitely finished coloured delineations. The plates, eight in number, each represent a group of diseases, and are so arranged that no less than sixty-one subjects are represented. Both as a guide for the diagnoses of the diseases of the skin, and for the treatment of these often troublesome affections, we know of no work which we can more highly recommend to the practitioner and student.

ART. XXIII.—*Outlines of the Veins and Lymphatics: with short Descriptions. Designed for the Use of Medical Students.* By JOHN NEILL, M. D., Demonstrator of Anatomy in the University of Pennsylvania, &c. &c. Philada.: Ed. Barrington and Geo. D. Haswell, 1847, pp. 29. Plates VIII.

THIS volume is designed as a companion to the two, of a similar kind, on the arteries and nerves, noticed in our numbers for Oct. 1845, p. 425, and for April, 1846, p. 438. As in the former publications, the principal vessels only are given, and the names are placed upon or near them, so as to avoid the inconvenience of the usual mode of reference. Like its predecessors, this volume is a convenient aid to the student just commencing the study of anatomy.

SUMMARY

OF THE

IMPROVEMENTS AND DISCOVERIES

IN THE

MEDICAL SCIENCES.

ANATOMY AND PHYSIOLOGY.

1. *Death from an impermeable covering of the Skin.*—The importance of the function performed by the skin, is perhaps scarcely sufficiently appreciated. The experiments of Becquerel and Breschet show that animals whose skins are covered with an impenetrable coating, speedily die. (See Number of this Journal for Oct. 1842, p. 445.) Any cause which interrupts the functions of a considerable portion of the cutaneous covering of the body, is productive of serious consequences. Thus extensive blisters, especially in children, are productive of very ill effects. Burns, also, are, as a general rule, serious in proportion to their extent. The late Dr. Physick used to mention in his lectures, a case in which a child fell into a tub of hot water, in which the mother was washing, with a fatal result.

M. Mojon, at a late meeting of the Medical Society of Emulation of Paris, stated that a child whose body had been covered with gold leaf, for a figure in a procession, died the same night.

2. *On the Function of the Red Corpuscles of the Blood, and on the Process of Arterialization.* By Geo. Owen Rees, M. D.—(*Proceedings Royal Soc.*, June 3d, 1847.) The author states that he was first led to the new theory he has formed for the explanation of the chemical phenomena of respiration, and more especially of the change in the colour of the blood which occurs in that process, by having observed that a garlic odour, similar to that evolved from phosphorus, was produced by agitating in distilled water, the clot obtained from some specimens of venous blood. His attention was consequently directed to the investigation of the state in which the phosphorus exists in the blood; and the result of this investigation was the theory, of which the following is a succinct outline.

The venous corpuscles are known to contain fat in combination with phosphorus. This compound ingredient of the corpuscles, on coming into contact with atmospheric oxygen during the respiratory act, is consumed, and combining with that oxygen, forms the carbonic acid and water which are expired, and also phosphoric acid, which, uniting with the alkali of the liquor sanguinis, forms a tribasic phosphate of soda. This salt, like many others, acts upon hæmatosine in such a manner as to produce the well-known bright arterial tint.

The analyses which the author has performed, in order to test the correctness of this theory, were made upon the blood, both of the veins and of the arteries, of the same animal; and also upon separated portions of the same venous blood; one of which portions had been artificially arterialized by having been brought into contact with air, while the other portion had not been so exposed. These comparative experiments showed that arterial blood, both when obtained from the vessels, and when artificially produced, contains in its serum a larger proportion of tribasic phosphate of soda than that obtained from the veins. The venous

corpuscles, as they are contained in the clot, yield a fatty matter combined with phosphorus; while those from arterial blood yield a fat, the ashes of which manifest an alkaline reaction. Thus the venous corpuscles are shown to be acted upon both by respiration, and by the artificial arterialization of the blood, in such a manner as to lead to the formation of tribasic phosphate of soda, at the expense of the phosphorus they contain.

No exact quantitative analyses were attempted by the author, the comparative experiments having been performed on small portions only of serum (from 25 to 40 grains); sufficiently large, however, to furnish satisfactory evidence of the actual presence of the phosphate in arterial blood, and also in those portions of venous blood which had been arterialized out of the body; while no such indications were obtained from similar portions of the blood contained in the veins.

At the conclusion of the paper, the author notices the experiments of Enderlin, in which no alkaline carbonate could be detected in the ashes of blood; and shows that this is the natural consequence of the phosphates of the clot being oxidized during combustion, and thus supplying a quantity of phosphoric acid sufficient to decompose completely the alkaline carbonate produced by the incineration of the lactate and albuminate of the serum. Most specimens of serum, even as obtained from arterial blood, yield an alkaline carbonate when incinerated; and this is always the case with the serum of venous blood. The author, therefore, thinks himself warranted in regarding the conclusion founded on Enderlin's experiments, that the blood contains no lactate, as being erroneous.

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3. *On the entrance of Insoluble Substances from the Intestinal Canal into the Blood-Vessels.* By Prof. Oesterlen.—In some recent experiments Prof. Oesterlen administered, for five or six days in succession, to five rabbits, a cat, and two young fowls, a certain quantity of wood-charcoal in their food. The charcoal was reduced to the finest possible powder, and was rubbed up with water. About an ounce from first to last was taken by the rabbits; rather less by the other animals. Oesterlen preferred charcoal for his experiments, owing to there being no doubt about the complete insolubility in the intestinal canal, and owing to the circumstance of the smallest particles of this substance being distinguishable by their deep and uniform colour, and by their peculiar forms; the points and edges on their surface preventing their being mistaken for particles of pigment. In all the experiments, the excrements voided from the animals were coloured black.

After administering the charcoal for five or six days, the animals were severally strangled, and the blood of each was examined. One of the mesenteric veins was in the first place opened, and a drop of blood removed therefrom on to a slip of glass, carefully cleaned from all trace of dust and charcoal, and then examined beneath the microscope. In such cases, it was noticed that in a portion of the blood, extending over not more than half a line of surface, there were from three to six particles of charcoal, which were in all respects similar to those of the charcoal administered. The smallest and most abundant of these particles were not more than from 1-300th to 1-200th of a line in diameter; others, however, and by no means a few, were from 1-30th to 1-100th of a line in length, by 1-180th to 1-150th in breadth; whilst others, again, appeared so large, that it is a matter of wonder how they could have made their way into the blood through epithelium, mucous membrane, and the walls of the blood-vessels. For example, some were 1-60th, 1-42d, and even more, of a line in length, and almost equally as broad. Many appeared as blocks, with ragged edges, or with teeth, spines, or tail-like processes projecting from them; others were distinctly triangular: and in many the pores were clearly discernible, so that the particles of charcoal could not be mistaken for pigment cells. Similar particles were also found in tolerably abundant quantity in blood from the trunk of the portal vein; also in the blood-coagula of the right side of the heart, in the liver, the lungs, the spleen, more scantily in the kidneys, and lastly in the inferior cava. In the cat, the contents of the thoracic duct were examined, but no trace of charcoal was found therein; the quantity found in the blood, and in the several organs of this animal, was also much smaller than in the rabbits and fowls. None of the charcoal could with certainty be recognized in either the urine or the bile; no alteration could be detected on the mucous surface of the stomach, or intestinal canal, or in any of the

other organs or blood-vessels: the whole intestinal mucous surface had of course a blackish-gray colour.

That other insoluble substances besides charcoal can be absorbed into the blood, was shown by experiments on two rabbits and a young fowl, to whom recently-precipitated Prussian blue was administered with their food. The excrements were coloured blue; and after death there were found in the blood of the mesenteric veins, of the portal vein, as also in different organs of the body, a considerable quantity of roundish dark particles, which exactly resembled those of Prussian blue, and around the margins of which, when highly magnified, a bluish lustre appeared. Neither Prussian blue, however, nor cinnabar, nor any other red or yellow substance, is so well suited for these experiments as charcoal, since their molecules do not possess such a characteristic form as those of charcoal do, and their peculiar colour becomes manifest only when many of them are heaped together.

The general conclusion which must be derived from the results of the above experiments seems to be that, contrary to the prevailing opinion, solid insoluble substances may be taken up from the intestinal canal into the blood-vessels.—*Lond. Med. Gaz.*, July, from *Heller's Archives*, Bd. iv. heft 1.

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4. *Researches on the Nervous System.*—M. C. Robin commmunicated to the French Academy of Sciences, 21st, June last, some researches on the two orders of elementary nerve tubes, and the two orders of ganglionary globules which correspond to them. The object of these researches is to demonstrate that the ganglions of the spinal nerves and of the great sympathetic do not give origin to elementary nerve-tubes, as many modern anatomists admit,—as Valentin, Remak, Bidder, and Volkmann, &c.,—but that all nerve-tubes arise exclusively from the spinal cord and encephalon; consequently, that one can only regard these ganglions as special little nervous centres, performing, with respect to certain functions, the same office as does the cerebro-spinal axis for the other functions. These reflections naturally occur to the mind, when one sees the cavity of the tubes, or elementary nerve-fibres, given off from the spinal cord, or from the encephalon, merge into the cavity of the cells of the ganglion—(ganglionary globules,) at one of their poles, to reappear at the opposite pole of the cell, in the same manner as they entered.

Setting out from a cell, (globule.) these nerve-tubes proceed to lose themselves in the organs. Thus those peculiar cells, the agglomeration of which constitutes nervous ganglions, are no other than organs which are interposed between the origin of the nervous tube and its termination at a determinate point of its course; and perhaps there is not more than one on each tube: they arrest it in its course, but allow it once again to re-appear; they change it, they modify its structure at a point, to immediately restore it again.

Authors who have written on this matter have, hitherto, not observed the entrance and exit of each elementary tube at the two opposite poles of each globule, but only one or the other. Hence they have formed the opinion, that each of these cells of ganglions is a little nervous centre of origin for each tube.

There is yet a more important fact overlooked by others. But one kind of cells has been described, although there are two, the one kind differing from the other in numerous characters, deducible from the consideration of form, volume, contents, walls, &c. One of these two kinds of globules is always in connection with the elementary nerve-tubes of animal life, or the large tubes; the other is specially associated with the elementary tubes of organic life, or the sympathetic and their tubes. This mutual relation is constant, and this confirms the opinion of their being the two orders of elementary nerve-tubes, just named.

The two orders of globules, and their corresponding tubes, exist in the ganglions of the posterior or sensitive roots of the spinal nerves; but the globules do not exist in the anterior or motor roots.

They also exist in the ganglions of the encephalic nerves, and in those of the sympathetic; only in the latter there is a much greater number of globules and of delicate tubes than of globules and large tubes—about thirty or fifty to one, more or less, according to the ganglions. In the ganglions of the spinal marrow, on the other hand, there are about four or five globules and large tubes to one of the other description.

These facts contribute to confirm the observations of anatomists, who have pointed out the existence of two orders of elementary tubes in the nerves of animal life and in those of the sympathetic: but the large tubes predominating in the former, the thin ones in the latter.

The absence of ganglionary globules on the anterior or motor roots of spinal nerves anatomically distinguishes the elementary tubes of motor nerves of animal life from those of sensitive nerves. But this decisive character can be remarked only so far as where the anterior and posterior roots unite. If, to push the theory further, we were asked what functions we would attribute to the cells of the ganglia, we should answer that they are the modifiers of the action which goes on in the sensitive and in the organic nerves; but that it is impossible to form an idea of the nature of such modification.

Since the ganglia of the sympathetic and of the cerebro-spinal nerves enclose the same sorts of ganglionary globules, and the same elementary tubes, but only in different proportions, we see that we cannot, with Reil and Bichat, &c., conceive two independent nervous systems. This opinion is founded on the communications of the great sympathetic with the spinal nerves; on the fact that the sympathetic exclusively furnishes the nerves of the diaphragm of birds; on the partial and successive substitution of sympathetic nerves for spinal and encephalic in a great many vertebrata.

ORGANIC CHEMISTRY.

5. *Nature of the Colouring Matter of the Bile.* By M. Blondlot.—Tiedemann and Gmelin, as well as most modern chemists, consider that the colouring matter of the bile, as also all other colouring matters of organic origin, present tints which increase or diminish in depth according as they contain more or less oxygen; and that the transition from yellow to red, green, blue, and violet, which the colouring matter of the bile manifests under the influence of certain reagents, is due essentially to oxidation. It seems more probable, however, that carbon, and not oxygen, is the substance which must be regarded as the principal agent concerned in the production of colour in these organic matters. For example, it is well known that, when concentrated sulphuric acid is placed in contact with almost any organic substance, it destroys such substance, and, at the same time, acquires a more or less black colour. This circumstance depends, without any doubt, on the great affinity of sulphuric acid for water, the formation of which it determines at the expense of the oxygen and hydrogen of the organic matter; so that the carbon, being rendered more and more predominant, finally appears with its characteristic black colour. Now, if one examines with attention the phenomena which are manifested in this simple experiment, it will be readily perceived that the colour becomes black only by degrees, and after having passed through different shades of yellow, red, brown, and violet. It is indeed true that these various tints are not well marked, and appear to be confounded one with the other; nevertheless, there are some substances which, treated thus with sulphuric acid, produce much more strongly marked colours: such, for example, are the resinous substances, and especially the biliary resin. If a small quantity of this substance be placed in concentrated sulphuric acid, it will be observed, during its decomposition, to present a series of distinct and well-marked colours. The liquid becomes at first yellow, then orange, red, lilac, green, blue, or violet, and, lastly, black. Now it is evident that in this case the colouring matter has acquired a tint the depth of which has increased in proportion as the carbon became more predominant. And analogy leads to the conclusion that a similar view may be held in regard to other colouring matters of organic origin. The colouring matter of the bile, therefore, is deeper according as it is richer in carbon; and, in cases where the colour is very dark, the colouring matter appears to consist almost entirely of carbon. This is well shown also in the fact pointed out by Berzelius, that there exists one kind of biliary calculus which appears to be principally composed of carbon.—*Essai sur les fonctions du foie.*

6. *Colouring Matter of the Bile.*—Polli, one of the most energetic of the Italian physiological chemists, has recently published (in his own Journal) a memoir on the nature of the colouring matters of the blood and bile. The following are his principal conclusions:

1st. The yellow pigment of the bile and the red pigment of the blood, are one and the same substance in different stages of oxidation.

2d. The occasionally green and occasionally yellow colour of the bile contained in the fæces, the different tints in the skin in jaundice, and the change of colour observed in ecchymoses, are all dependent on different stages of oxidation of the same pigment.

3d. The red colouring matter of the blood is converted into yellow during its retrograde metamorphosis; the yellow pigment being in fact hæmatin that is no longer of service in the system, or has become excrementitious.

4th. The yellow pigment appears to be formed in part within the vascular system by a direct metamorphosis of the hæmatin of the corpuscles: taking place slowly in healthy persons, but rapidly in jaundiced ones. In both cases a corresponding quantity of it is discharged by the urine. The remainder of the yellow pigment is formed in the liver from the blood or its colouring matter by a process of reduction.—*Day's Report*, in *Ranking's Abstract*, from *Annali di Chim.*, Jan. 1846.

7. *Detection of Mercury in the Pus from a Bubo.*—In order to disperse a bubo, a man had been ordered to rub in several ounces of mercurial ointment. Poultices were applied, and when the gland was opened, the pus was collected and analyzed. It yielded unequivocal traces of quicksilver.—*Lond. Med. Gaz.*, July, from *Heller's Archiv.*, 1847, H. 2. S. 185.

MATERIA MEDICA AND PHARMACY.

8. *Citrate of Magnesia as a Purgative.*—M. Rage Delabarre, in making some experiments with salts of magnesia, had occasion to observe that the citrate of magnesia is devoid of the bitter and disagreeable taste which characterizes the other salts of this base; he has hence been induced to recommend it as a purgative. "It may be obtained," he says, "in two different ways. It may be made by double decomposition from sulphate of magnesia and citrate of soda, or by saturating a solution of citric acid with magnesia or the basic carbonate. If it be prepared by saturating a solution, somewhat concentrated, of the acid, the liquor which is at first liquid and transparent, becomes in an instant a hard mass, adhering strongly to the sides of the vessel in which the combination is effected. This arises, probably, from the water which at first holds the salt in solution, passing to the state of water of hydration.

The neutral citrate of magnesia, prepared by either of the processes above described, is a white pulverulent insipid salt, soft to the touch, heavier than magnesia, and soluble in water aided by the addition of a slight excess of the acid. This solution has a slightly acid taste, but is in no way disagreeable.

M. Delabarre proposes the following formulæ for the administration of the citrate of magnesia:—

No. 1 (mild).

	grammes.		grains.
Citrate of magnesia,	40	=	617·360
Citric acid,	2	=	30·868
Simple syrup,	125	=	1929·252
Essence of orange,	q. s.		
Water charged with carbonic acid,	q. s.		

to fill a common mineral water bottle, containing 750 grammes (about the size of a wine bottle).

No. 2 (strong).

	grammes.		grains.
Citrate of magnesia, - - - - - -	50	=	771·701
Citric acid, - - - - - - - -	2½	=	38 585
Simple syrup, - - - - - - - -	150	=	2315 103
Essence of orange, - - - - - -	q. s.		
Carbonic acid water, - - - - -	q. s.		

for a wine bottle.

The following is the formula for making 100 bottles of the above, each containing 50 grammes, or 771 grains of the citrate:—

Dissolve 6 pounds 9 ounces and 364 grains (avoirdupois weight) of crystallized citric acid in 22 pounds of water, and add to the solution 1 pound 5 ounces and 83 grains (avoird.) of calcined magnesia. When the combination has been effected, filter the solution, and add to it 33 pounds (avoird.) of simple syrup flavoured with essence of orange. Distribute this solution in one hundred wine quart bottles.

Then precipitate 2 pounds 10 ounces and 145 grains (avoird.) of sulphate of magnesia, with a sufficient quantity of carbonate of soda, in the usual way: wash the precipitate, put it into a proper apparatus, with about 90 pints of water, and pass carbonic acid through it until the magnesia is dissolved. This being effected, use the solution thus formed to fill up the bottles into which the previous solution has been put.

MM. Renauldin and Soubeiran, in their report on the above mineral water state:—"The proportion of magnesia in the citrate is sensibly the same as that in an equal weight of the crystallized sulphate, but the former salt is not so powerful in its medicinal effects as the latter, the fifty grammes or 771 grains of citrate contained in the bottle of mineral water, being about equal in effect to thirty or thirty-five grammes (463 or 540 grains) of crystallized sulphate.

Notwithstanding the large quantity of citrate in the mixture, the taste does not at all indicate the presence of any salt; it resembles lemonade in flavour. and acts as a purgative, quite as well as the ordinary Seidlitz water. It certainly affords, from its agreeable taste, a good method of overcoming the repugnance of some patients to purgative medicines. It occasions neither thirst nor tenesmus, and but little pain during its operation; it may therefore be said that it operates safely and agreeably. Our observations would indicate that the proper dose of the salt is forty-five grammes (694 grains) for a man, and forty grammes (617 grains) for a woman.

In the preparation of the magnesial lemonade, according to the above formula, the first part of the operation consists in making a citrate of magnesia with excess of acid. In the second part of the process, part of the free citric acid is saturated with the carbonate of magnesia, carbonic acid being at the same time set free so as to make it an effervescent water, while there is sufficient uncombined citric acid to give it an acidulous taste.—*Dub. Med. Press*, Aug. 1847, from *Pharm. Journ.*

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9. *Dressing of Blisters.* (*Monthly Journ. Med. Sci.*)—Dr. D. Maclagan has been in the habit, for some years, of dressing blisters with cotton wadding, instead of the ordinary ointments, and has found it, he says, very convenient in practice. His plan is the following: after a blister has been applied for the requisite number of hours, it is to be removed, and the part covered for two hours with a soft warm poultice of bread and milk. The effect of the poultice generally is to make the vesication more complete, and at the same time to moderate the tenderness of the blistered part. When the poultice is taken off, the vesication, if it has not burst spontaneously, is to be cut so as to discharge the serum, and then a thick layer of soft cotton wadding applied over the part with the undressed or woolly surface next the skin. If, in the course of a few hours, this should become soaked with the serous discharge from the blister, so much of the cotton may be removed as can be done without disturbing the loose epidermis beneath, and the whole again covered with a dry layer of cotton. This is all the dressing which is in general requisite. The cotton is allowed to stick to the skin of the blistered part, and when a fresh layer of epidermis is formed, which takes place very readily, the old epidermis and cotton come off together, leaving a smooth whole surface below.

The advantages of this plan he states to be:—first, that it renders the blister much less painful and annoying to the patient then when unguents are used. The tenderness in fact is comparatively so trifling, and the protection by the cotton so good, that he has been enabled, without annoyance to the patient, to percuss freely, and apply the stethoscope firmly over blistered parts which had been dressed for the first time only an hour or two previously: secondly, the blisters heal faster under it than under dressings with cerate; for, although the cotton may remain adhering for some days, he has generally found that within twelve hours the patient ceases to feel the blister a source of annoyance. Lastly, it dispenses with the greasy applications so disagreeable to patients of cleanly habits.

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10. *Cusparia or Angustura.* By Robert Dick, M. D.—This is a warm tonic, extremely useful in cases exactly fitted for it, but sometimes producing much febrile excitement. In France, it is regarded as a tonic of about equal power with calumba, quassia, and simaruba; but it differs considerable from these, and is far more stimulating. If we might borrow from the vocabulary of Giacomini, we should describe cusparia as a very pure gastro-enteric hypersthenic; in other words, a tonic, approaching, as nearly as possible, to a stimulant of the mucous membrane of the stomach and bowels. It is peculiarly indicated in atony of the stomach and bowels, accompanied with an exsanguine condition of the mucous membrane. But in debility of the digestive organs from an active cause—that is, depending on, or accompanied by, the slightest degree of pyrexia and capillary congestion, it is contraindicated. In mucous diarrhœa of a passive character, it is useful; also in cases of simple flatus, as of that of a gentleman who now consults me. The colon becomes distended with large quantities of gas, entirely devoid of smell, but the presence of which proves extremely irksome to him,—a young man, of nervous temperament, and exercising a profession which requires him to speak in public.—*Lancet*, July 3, 1847.

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11. *On the Properties of the Iberis Amara.*—Dr. Silvester communicated to the south-eastern branch of the Provincial Medical and Surgical Association, at their last annual meeting, a paper on the virtues and properties of the Iberis Amara, or Candytuft, a remedy brought to light by the late Dr. Williams during a course of therapeutical researches at St. Thomas's Hospital. Many striking and remarkable cases were related in proof of its salutary power over asthma, bronchitis, dropsy, and more especially cardiac hypertrophy. It seems that it does not diminish the velocity of the heart's action like digitalis, but that it possesses the property of controlling the violence and sharp action of the organ, and softening the pulse; hence its great value in hypertrophy with dropsy.

Dr. Silvester had prescribed it for ten years in numerous instances of the above-mentioned diseases, always with some benefit, and sometimes with almost magical efficiency. It ought not, as the author of the paper well observed, to be administered rashly, as is too often the case with new remedies; for then, from its frequent failure, it would be, as it had been before, as rashly laid aside. A careful adaptation of the remedy to the disease, or its symptoms, was essential to its success; no ill effects followed its use; it occasionally induced giddiness, sickness, or diarrhœa, but these subsided on discontinuing the medicine. Its curative power was not dependent on such occasional consequences of its administration, inasmuch as its control over the abnormal action of the heart was equally evident whether these effects were absent or present; its influence being like digitalis, belladonna, and some other natural agents, of a purely specific character. The dose prescribed was from one to three grains, generally mixed with cream of tartar, which concealed the nauseousness of the taste, and secured a perfect trituration and division of the tough seed.

The leaves, stem, and root, possess similar properties; but from convenience, and from their greater relative strength, the seeds were the parts of the plant chiefly employed. Iberis is a family of plants belonging to the order Cruciferæ. The Iberis in question is the I. amara, *Linn.*, found plentifully in every garden, and cultivated for its brilliant milk-white flowers. It appears from the researches of the author, that this valuable plant was not only known to Pliny, and is mentioned by him in his Natural History, as a remedy for gout, but that it was accurately

described by Aetius, Paulus Ægineta, and Oribasius, and lauded by these venerable fathers of medicine as an excellent external and internal medicament in various diseases. It passed under the several names of Iberis, Cardamine, Lepidium vel Lepidum. Aetius has a long chapter headed "De Iberide sive Cardamine quæ et Lepidium vocatur." He remarks that Galen had written fully on its application in rheumatic affections of the hip-joint; and that Archigenes had prescribed it "in splenicis et coxendicibus;" and in an epistle to Aristo, which is quoted, had entered copiously into the subject of its botanical character, observing that its flowers were milk-white.

The Nasturtium, a plant akin to the Cardamine, is spoken of as a valuable addition to those medicines which relieve difficulty of breathing, and which dry up thick humours. Paulus Ægineta describes the Iberis et sylvestre Nasturtium as identical, and speaks of their value "non solum coxendicum sed etiam aliis diuturnis morbis." Oribasius employs similar terms of eulogy in his description of the plant in question, so that no doubt can exist of its high estimation amongst the Greek practitioners. There is an incidental proof in Lindley's "Introduction to the Natural System," of the correctness of the belief that the order Cruciferæ contains many plants of value in the treatment of asthma and dropsy. It is there said that Prince Maximilian of Wied Neuwied, relates of the Brazilian Indians, that they used a kind of cress, resembling that of Europe, as a good remedy for asthma. The Iberis amara is a true cress.—*Prov. Med. and Surg. Journ.*, July 28th, 1847.

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12. *Electric Moxa.* By Dr. Golding Bird.—It was long ago observed by Humboldt, and afterwards by Grapengiessier, that when a simple galvanic arc was applied to a blistered surface, the part opposed to the most oxidizable metal was more irritated than that to which the negative plate was applied. In applying such a simple arc to the treatment of paralysis, I was struck with the remarkable effects produced, and such a combination of its results induces me to propose the following ready mode of establishing a discharge from the surface of the body. Order two small blisters, the size of a shilling, to be applied to any part of the body, one a few inches below the other; when the cuticle is thus raised by effused serum, snip it, and apply to the one from whence a permanent discharge is required, a piece of zinc foil, and to the other a piece of silver; connect them by a copper wire, and cover them with a common water dressing and oiled silk. If the zinc plate be raised in a few hours, the surface of the skin will look white, as if rubbed over with nitrate of silver. In forty-eight hours, a decided eschar will appear which (still keeping on the plates) will begin to separate at the edges in four or five days. The plates may then be removed, and the surface where the silver was applied will be found to be completely healed. A common poultice may be applied to the part, and a healthy, granulating sore, with well-defined edges, freely discharging pus, will be left. During the whole of this process, if the patient complains of pain at all, it will always be referred to the silver plate, where, in fact, the blister is rapidly healing, and not the slightest complaint will be made of the zinc plates, where the slough is as rapidly forming. A very interesting physiological phenomenon is observed in making an issue by these means. If the plates be applied to a limb, and on different places, contraction of the subjacent muscles will always be observed most severe when the patient is in the act of falling to sleep; and in a few cases, these sensations have been sufficiently annoying to induce the patient to untwist the wires fixed to the plate, when by interrupting the current these feelings ceased. But if the plates were applied to opposite sides of the body, as when on the chest to different sides of the mesial line, no contractions whatever occurred. This admits of explanation by a reference to the fact of the nerves not crossing the middle line of the body.—*London Medical Gazette.*

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13. *Di-Arsenite of Quinine.*—Dr. Kingdon read to the South-Western Branch of the Provincial Medical Association, at their annual meeting on the 16th of July last, a notice of a new preparation of quinine which he had lately succeeded in preparing. It is the di-arsenite,—that is, it consists of one part of arsenious acid, and two of quinine; it is a powerful medicine, and one which he has found of great benefit, especially in chronic cutaneous affections, and has no doubt it would

be equally beneficial in ague, tic douloureux, and neuralgia. It possesses both the qualities of a mineral and vegetable tonic, and when the system has become habituated to either the one or the other, (which we frequently find the case from long-continued use,) by the administration of this medicine you still keep up the former action, while at the same time a new one is introduced into the system. He related a case which demonstrates this very satisfactorily. A young woman who had been affected with lepra six years, was admitted a patient at the Exeter Dispensary, under his care, and was ordered the liq. potassæ arsenitis, with decoct. dulcamaræ, three times a day. For a time the disease appeared to be improving, but it gradually got back to its former state, although the quantity of arsenical solution was increased to the full extent; he then ordered one-third of a grain of di-arsenite of quinine to be taken twice a day, and the following week the eruption was much improved; to make use of her own expression, "it was looking quite beautiful." It has been gradually increased to four times a day, and now she is nearly well.

Dr. Kingdon has tried it in several other cutaneous diseases, and with equal success. The preparation is made in the following manner:—He first dissolves 64 grains of arsenious acid, and 32 grains of pearl ashes, or subcarbonate of potash, in four ounces of distilled water, by boiling it for about half an hour, and then makes it up to four ounces with as much water as may be required, so that each drachm may contain two grains of arsenic. He adds five drachms of this solution to two scruples of disulphate of quinine, previously dissolved in boiling distilled water; immediately a white curdy precipitate is formed, which is the di-arsenite of quinine; he then pours it on a filter, well washes it, and leaves it on the filter to dry. When the proportions are accurately weighed, the water is neutral, and no arsenic can be detected. It is uncrystallizable and insoluble in water, but soluble in alcohol. He gives the one-third of a grain for a dose twice a day, and gradually increases it to three and four times in the course of the day, either made into pills with bread, or in the form of powders mixed with a little sugar or gum; of course nothing acid must be given at the same time, as that would decompose it.—(*Provincial Medical and Surgical Journal*, Aug. 25, 1847.)

MEDICAL PATHOLOGY AND THERAPEUTICS AND PRACTICAL MEDICINE.

14. *Efficacy of Compression of the Epigastrium for the cure of Hiccup.*—The employment of compression of the epigastrium to arrest constant hiccup, was suggested to M. Rostan, a long time since, by an old physician of Paris, whose wife was subject to attacks of hysteria, during which she suffered from incessant hiccup. This physician had remarked that his wife experienced remarkable relief from strong compression on the epigastrium with the hand. Since this period M. Rostan has employed this simple means in many cases of the same kind and constantly with good effect, whatever might be the cause of the hiccup. To render the pressure constant, M. R. has used, instead of the hand, a pad with a truss spring.—*La Lancette Française*, Feb. 20, 1847.

M. Boyer (*Révue Méd. Chirurgicale*, July, 1847), relates three cases of painful and obstinate hiccup instantly relieved by the above means. Bordeu recommended long ago, this plan, which had fallen into oblivion.

15. *Scurvy.*—The *Dublin Medical Press* (July 21st, 1847), contains an interesting paper on this disease, which is now prevailing very extensively in Great Britain, and particularly in Ireland, by Dr. O. B. Bellingham. Six cases of the disease are related, from an analysis, for which he presents the following as the more prominent symptoms of the present epidemic.

"*Appearance of the gums.*—The first appearance of the disease in the gums is slight swelling and increased redness of these parts, with a tendency to bleed, commencing usually upon the inside of the incisor teeth of the upper jaw, but soon extending to both; the swelling gradually engages the gums lining the molar teeth, particularly upon the inside, or it may commence here. When the disease

is advanced, the appearance of the mouth is very disgusting, the gums upon both sides of the teeth are red and swollen, presenting a broad irregular surface, and resembling the fungous granulations of certain ulcers, bleeding from the slightest cause, impeding articulation, and almost totally preventing mastication. When more advanced, the gums overhang the incisor teeth, and cover and almost conceal the molars; the breath at the same time is most offensive, resembling that of a person under the influence of mercury, but even more disagreeable. The local application which seemed to answer best in these cases, and which was the most grateful to the patient, was a gargle composed of tincture of myrrh, tincture of bark, and cinnamon water.

"*Spots of purpura simplex.*—Spots resembling those of the purpura simplex of Willan and Bateman were among the earliest symptoms; they were always first observed upon the lower extremities, usually below the knees, and were often limited to these parts; in no instance did I notice them upon the face. Many of these spots were small, resembling the maculæ of typhus or flea-bites; the majority, however, were larger; as they faded, they assumed a dull brown colour, just as is observed in purpura simplex. They were not elevated above the surface; in one or two instances they seemed to be mixed with papulæ, as they were attended with considerable itching.

"*Patches resembling purpura hemorrhagica.*—Large patches resembling those figured in Willan and Bateman's work as characterizing purpura hemorrhagica, were observed only in the more advanced stage of the disease; in some instances these seemed as if formed by the union of many smaller patches; their shape was irregular; they were seen most frequently in the vicinity of the joints, particularly upon the inside and outside of the ankles; several were often present in the same patient, and their size seldom exceeded that of a half-crown. In one patient recently in hospital (who, however, showed no other symptom of scurvy), they had a very unusual site—viz., around each eye, and under the conjunctiva covering the sclerotic coat. It commenced in the cellular tissue about the right eye, and then extended to the globe, and continued to increase until no part of the sclerotic coat was visible, and the conjunctiva covering it had a deep blood red colour. The left eye then became similarly affected, and the patient presented a most extraordinary appearance. After a time the effused blood began gradually to be absorbed, and the patient left the hospital well.

"*Patches resembling ecchymoses.*—Patches of discoloration, resembling the effects of a contusion or bruise, were very common, and were sometimes the first symptom noticed. In the very early stage the discoloured appearance of the skin might have been mistaken for dirt; after a time, the part presented a most remarkable resemblance to the effects of a bruise or contusion, all the shades of colour which are familiar to us after such an injury being present. These patches of ecchymosis were in a great measure confined to the extremities, and were much more common upon the lower than the upper extremities; they were usually seen in the vicinity of the joints; a common situation was the ham, or the calf of the leg, or about the ankles; sometimes they were seen upon the thighs, the front of the wrists, or the arms; in one instance, immediately over the patella. They were almost always accompanied by the spots and patches of purpura already described.

"*Swelling and stiffness in the hams.*—A symptom which was sufficiently common was a stiffness of the hamstring tendons, accompanied by hard painful swelling in the popliteal space; this usually commenced in one limb and soon extended to the other. This condition was marked by considerable pain on motion, and by patches of ecchymosis upon the part, the space between the tendons of the ham appeared to be filled up, and the swelling extended below the joint to the calf of the leg; the part was hard to the touch, and the patient suffered so much pain upon motion as to incapacitate him from walking, and it was for this symptom alone that he sometimes sought relief. Swelling and stiffness in the hams were sometimes the first symptoms noticed, and sometimes almost the only ones present. The local application which appeared to afford most relief in it was 'the anodyne liniment' of the Pharmacopœia.

"*Œdematous swelling of the extremities.*—When the disease was at all advanced, more or less swelling of the lower extremities was generally present; this was generally limited to the ankles, and resembled œdema, but the swelling was

harder and did not so readily pit upon pressure; it was also accompanied by increased heat of surface and pain, and the skin was studded with spots and patches of purpura. Although the swelling was usually limited to the ankles, it sometimes engaged the entire limb from the groin downwards. In one case where the swelling was limited to one side, the limb presented many of the characters of phlegmasia dolens; the patient was a female too, and had been confined a short time previous to its setting in.

"*Debility.*—Debility was an early and a constant symptom; at first it consisted merely in a disinclination to exercise, and the patient was easily fatigued. As the disease advanced, the patient became so weak as to be incapable of moving about, or of making almost the slightest exertion, and he was usually further incapacitated, owing to the swelling and stiffness of the hams, or to the œdematous swelling of the lower extremities.

"*Pains resembling rheumatism.*—Pains referred to the bones or joints, resembling those of chronic rheumatism, were common; in some instances, they were the first which attracted the patient's attention, and they were usually supposed by him to be rheumatic. They set in usually before any spots of purpura appeared; but the gums, if examined, were always found to be engaged at the same time.

"*Countenance.*—The countenance was always characteristic, particularly when the disease was at all advanced; it was then somewhat bloated and anæmic; the cheeks and lips being blanched, with a yellowish tinge in the skin, at the same time being more or less expressive of anxiety. Sometimes the cheeks were much swollen, the patient was unable to articulate, and resembled a person suffering from severe toothache.

"*Palpitation—Dyspnœa.*—In few of the cases which I have met with were palpitation or dyspnœa much complained of by the patient. The action of the heart was usually somewhat more rapid than natural, and the pulse was small and feeble. No bruit de soufflet was ever audible on auscultation over the large arteries, nor was bruit de diable ever heard in the veins of the neck, though from the anæmic appearance of the person, it might, *à priori*, have been expected.

"*Hemorrhages, &c.*—No hemorrhage occurred in any patient under my care from any part of the alimentary canal; the bleeding was almost confined to the gums; in one patient, a female, epistaxis occurred twice; in another the disease set in with menorrhagia, which yielded to the ordinary remedies. No patient presented ulcers upon the extremities or other parts, such as have been described by Lind and the older writers upon scurvy.

"*Appetite—State of the bowels.*—The appetite in almost every case was good, and remained so all through; the tongue was usually clean but pale, and the bowels were generally regular.

"The disease which has just been described, and which, unfortunately, is now so prevalent, is neither a new one to the country, nor is it one peculiar to seamen, as has sometimes erroneously been supposed; it is, in fact, precisely the same form of scurvy which in former times ravaged the northern countries of Europe, and whose visitations were as fatal and as much dreaded as any epidemic of modern times; but which had been so completely eradicated in these countries as to be never met with on land; and so rarely seen even at sea, that the majority of naval surgeons of the present day have had no opportunity of becoming acquainted with it.

"According to Lind, whose work upon the subject is the most complete, the countries in which scurvy formerly prevailed especially, were Holland, Germany, Hungary, Russia, Denmark, Sweden, Norway, and England. It would appear, from the history he has given, that the disease is one of very great antiquity, and that the prominent symptoms of the disease, as formerly observed, are identical with those of the present epidemic. Thus, Echthius, a physician of Cologne, whose work was published in the year 1541, enumerates, as the more certain symptoms, the following:—'A fœtid breath, a spongy swelling of the gums which are apt to bleed, with a loosening of the teeth, and an eruption of leaden-coloured, purple, or livid spots upon the legs.' Wierus, who wrote in 1567, adds some other symptoms,—viz., 'The weakness in the legs felt at the approach of the disease is attended with stiffness and pain; small spots, resembling blood sprinkled upon the part, appear on the legs, thighs, and on the whole body, but the very

large livid and purple spots chiefly on the legs. In the progress of the disease the tendons of the legs become stiff and contracted.' 'If we compare (Lind observes) the symptoms given by those two writers with the accounts of the disease contained in books of voyages, particularly in Lord Anson's Voyage round the World, we shall perceive an entire agreement in the essential signs of the disease.'

"That the disease now so prevalent in this country is identical with that which formerly prevailed amongst seamen in long voyages, is also evident from the description of the scurvy given by Lind, himself a naval surgeon. The following are the symptoms of this disease as laid down by him in the third edition of his treatise, published in the year 1772, and they will be found to correspond closely with the symptoms already mentioned as characterizing the present epidemic:—

"'The first indication of the approach of this disease is generally a change of colour in the face, from the natural and usual look, to a pale and bloated complexion; with a listlessness to action, or an aversion to any sort of exercise.

"'Their former aversion to motion degenerates soon into an universal lassitude, with a stiffness and feebleness of their knees upon using exercise; with which they are apt to be much fatigued, and soon put out of breath.

"'The gums soon after swell, and are apt to bleed upon the gentlest friction. Their breath is then offensive, and upon looking into their mouth, the gums have an unusual livid appearance, are soft and spongy, and become afterwards extremely putrid and fungous, one of the most distinguishing signs of the disease. They are subject not only to a bleeding from the gums, but from other parts of the body, especially at the nose.

"'The skin, when examined, is found to be covered with several reddish, bluish, or, more frequently, black and livid spots, equal with the surface of the skin, resembling an effusion of blood under it, as it were from a bruise. These spots are of different sizes, from the bigness of a lentil to that of a hand breadth, and larger; but the last are more uncommon in the beginning of the distemper. They are to be seen chiefly on the legs and thighs, often on the arms, breast, and trunk of the body, less frequently on the head and face.

"'Many have a swelling of their legs, which is first observed on their ankles towards the evening, and hardly to be perceived next morning; but, after continuing a short time in this manner, it gradually advances up the leg, and the whole member becomes œdematous; with this difference only in some, that it is never painful, also does not so easily yield to the finger, and retains the impression of it longer than a true œdema.

"'In the second stage of the disease, the patients most commonly lose the use of their limbs; having a contraction of the tendons in the ham, with a swelling and pain in the joint of the knee. Indeed, a stiffness in these tendons, and a weakness of the knees, appear pretty early in this disease, generally terminating in a contracted and swelled joint. They are subject to frequent languors; and when long confined from exercise, are apt to faint upon the least motion of the body.

"'The true scorbutic spots are flat and equal with the surface of the skin. I have sometimes, however, observed the legs, at the same time when greatly swelled, covered with dry scurfs or scales, and frequently there appear upon the skin small eruptions of the dry miliary kind.

"'Some have their legs greatly swelled, and covered with one or more large livid spots or blotches, others have hard swellings, those in different places, extremely painful; and others I have seen without any swelling, have the calf of the leg as hard as a stone.'

"It would therefore appear from what precedes—

"1st. That a disease which had been so far extinguished as to be unknown to the practitioners of the present day, has reappeared in this country, and now prevails extensively.

"2d. That this disease did not make its appearance until after the people had been deprived of their accustomed diet for several months.

"3d. That this disease prevails only among that class of the population whose diet consisted formerly, in a great measure, of the potato, and who, as long as they had this vegetable in abundance, enjoyed a perfect immunity from it.

"The subjects of the preceding cases appear all to have had a sufficiency of bread, others had meat in addition, with sometimes wine or porter; none suffered

from an absolute deficiency of food; but all agreed in not having used fresh vegetables from the period of the failure of the potato crop of last year. It is clear, therefore, that the cause of the present epidemic may be traced to the absence of the potato from the dietary of the poor; and it is equally clear that a diet of bread, with or without meat or broth, is incapable of preserving the body in health, and tends to develop scurvy; while we know from long experience in this country, that a diet consisting solely of the potato is capable of affording sufficient nourishment, and of preserving the body in perfect health.

"Now, the potato is placed by theorists nearly at the bottom of the list in the scale of articles of nutrition; indeed it has been assumed to consist of little besides water and carbon. According to the Liebigian theory, carbon, which is a large constituent of fat, but contributes hardly anything to muscle or bone, abounds in the potato, while the constituents of bone and muscle are abundant in peas, beans, wheat, oats, barley, and rye; *ergo*, the latter are much superior to the former as articles of food for the labouring population; and philanthropic individuals have calculated that an Irishman who consumes daily ten pounds of potatoes would gain more nourishment and strength from a few ounces of peas or beans. Indeed, if all we read about nitrogenized and non-nitrogenized articles of food were correct, the potato would have fallen into disrepute long since; and it ought by itself to be incapable of supporting the strength of a labouring man; although for more than half a century it has constituted the sole food of the great majority of the peasantry of this country, and we believe a healthier or a hardier population was to be met in few countries; contrasting sadly with their present altered aspect after a diet for some months composed of more highly nitrogenized substances.

"The philosophers of the Liebig school would appear to regard the human body as little more than a machine or laboratory, certain substances introduced into which undergo certain chemical changes, the non-nitrogenized being subservient to respiration, the nitrogenized to the formation of blood, from which the organized tissues are formed; consequently it is only necessary to introduce the necessary amount of each, and the machine will be preserved in good working order. Now bread and meat contain 'the plastic elements of nutrition' and 'the elements of respiration' in the exact proportions necessary, yet we see that a disease has been generated by such a diet, which the use of what in theory is a far inferior diet protects the individual from.

"I had intended to have followed up this subject, but the length to which this paper has already reached precludes the possibility of my doing so at present. I shall merely add, therefore, that the reappearance of scurvy in this country appears evidently to be due to the absence of the potato from the dietary of the poor; and that there can be no doubt that the free use of this vegetable is the best prophylactic against the disease, and has been the cause of its subsidence for so many years. The present epidemic will, therefore, serve to show that a diet which contains nitrogenized substances in the greatest amount, and in the smallest bulk, is not the most eligible for man, but that other circumstances must be taken into account if we expect to preserve the health."

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16. *On the Varieties of Headache.*—Dr. Samuel Wright, of Birmingham, in a clinical lecture delivered at Queen's College, gives the following account of the different varieties of headache:—

To give you some general notion of them, as we are yet dealing only in generalities,—suppose a patient comes to you complaining of headache. This is a very generic sort of term, and may involve a great variety of specialities, some serious, and others simple. One patient, we will say, is in his teens, or not far out of them, yet he looks older by many years than he ought to do. His face is blanched and parchment-like, cheeks sunken, eyes hollow, lustreless, and watery, and they never look fairly at you; the man is timid, nervous, shuns society, and has no inclination for active pursuits; he is subject to giddiness and forgetfulness, and has almost constantly a dull, heavy pain at the back of his head, perhaps extending down the spine, with a sense of weight and dragging of his legs. Here you have a nervous system enfeebled and shaken from causes you will easily learn if you pointedly inquire after the personal habits of the sufferer. Another complains of oppressive pain chiefly over his eyes, scarcely ever leaving him,

large livid and purple spots chiefly on the legs. In the progress of the disease the tendons of the legs become stiff and contracted.' 'If we compare (Lind observes) the symptoms given by those two writers with the accounts of the disease contained in books of voyages, particularly in Lord Anson's Voyage round the World, we shall perceive an entire agreement in the essential signs of the disease.'

"That the disease now so prevalent in this country is identical with that which formerly prevailed amongst seamen in long voyages, is also evident from the description of the scurvy given by Lind, himself a naval surgeon. The following are the symptoms of this disease as laid down by him in the third edition of his treatise, published in the year 1772, and they will be found to correspond closely with the symptoms already mentioned as characterizing the present epidemic:—

"'The first indication of the approach of this disease is generally a change of colour in the face, from the natural and usual look, to a pale and bloated complexion; with a listlessness to action, or an aversion to any sort of exercise.

"'Their former aversion to motion degenerates soon into an universal lassitude, with a stiffness and feebleness of their knees upon using exercise; with which they are apt to be much fatigued, and soon put out of breath.

"'The gums soon after swell, and are apt to bleed upon the gentlest friction. Their breath is then offensive, and upon looking into their mouth, the gums have an unusual livid appearance, are soft and spongy, and become afterwards extremely putrid and fungous, one of the most distinguishing signs of the disease. They are subject not only to a bleeding from the gums, but from other parts of the body, especially at the nose.

"'The skin, when examined, is found to be covered with several reddish, bluish, or, more frequently, black and livid spots, equal with the surface of the skin, resembling an effusion of blood under it, as it were from a bruise. These spots are of different sizes, from the bigness of a lentil to that of a hand breadth, and larger; but the last are more uncommon in the beginning of the distemper. They are to be seen chiefly on the legs and thighs, often on the arms, breast, and trunk of the body, less frequently on the head and face.

"'Many have a swelling of their legs, which is first observed on their ankles towards the evening, and hardly to be perceived next morning; but, after continuing a short time in this manner, it gradually advances up the leg, and the whole member becomes œdematous; with this difference only in some, that it is never painful, also does not so easily yield to the finger, and retains the impression of it longer than a true œdema.

"'In the second stage of the disease, the patients most commonly lose the use of their limbs; having a contraction of the tendons in the ham, with a swelling and pain in the joint of the knee. Indeed, a stiffness in these tendons, and a weakness of the knees, appear pretty early in this disease, generally terminating in a contracted and swelled joint. They are subject to frequent languors; and when long confined from exercise, are apt to faint upon the least motion of the body.

"'The true scorbutic spots are flat and equal with the surface of the skin. I have sometimes, however, observed the legs, at the same time when greatly swelled, covered with dry scurfs or scales, and frequently there appear upon the skin small eruptions of the dry miliary kind.

"'Some have their legs greatly swelled, and covered with one or more large livid spots or blotches, others have hard swellings, those in different places, extremely painful; and others I have seen without any swelling, have the calf of the leg as hard as a stone.'

"It would therefore appear from what precedes—

"1st. That a disease which had been so far extinguished as to be unknown to the practitioners of the present day, has reappeared in this country, and now prevails extensively.

"2d. That this disease did not make its appearance until after the people had been deprived of their accustomed diet for several months.

"3d. That this disease prevails only among that class of the population whose diet consisted formerly, in a great measure, of the potato, and who, as long as they had this vegetable in abundance, enjoyed a perfect immunity from it.

"The subjects of the preceding cases appear all to have had a sufficiency of bread, others had meat in addition, with sometimes wine or porter; none suffered

from an absolute deficiency of food; but all agreed in not having used fresh vegetables from the period of the failure of the potato crop of last year. It is clear, therefore, that the cause of the present epidemic may be traced to the absence of the potato from the dietary of the poor; and it is equally clear that a diet of bread, with or without meat or broth, is incapable of preserving the body in health, and tends to develop scurvy; while we know from long experience in this country, that a diet consisting solely of the potato is capable of affording sufficient nourishment, and of preserving the body in perfect health.

"Now, the potato is placed by theorists nearly at the bottom of the list in the scale of articles of nutrition; indeed it has been assumed to consist of little besides water and carbon. According to the Liebigian theory, carbon, which is a large constituent of fat, but contributes hardly anything to muscle or bone, abounds in the potato, while the constituents of bone and muscle are abundant in peas, beans, wheat, oats, barley, and rye; *ergo*, the latter are much superior to the former as articles of food for the labouring population; and philanthropic individuals have calculated that an Irishman who consumes daily ten pounds of potatoes would gain more nourishment and strength from a few ounces of peas or beans. Indeed, if all we read about nitrogenized and non-nitrogenized articles of food were correct, the potato would have fallen into disrepute long since; and it ought by itself to be incapable of supporting the strength of a labouring man; although for more than half a century it has constituted the sole food of the great majority of the peasantry of this country, and we believe a healthier or a hardier population was to be met in few countries; contrasting sadly with their present altered aspect after a diet for some months composed of more highly nitrogenized substances.

"The philosophers of the Liebig school would appear to regard the human body as little more than a machine or laboratory, certain substances introduced into which undergo certain chemical changes, the non-nitrogenized being subservient to respiration, the nitrogenized to the formation of blood, from which the organized tissues are formed; consequently it is only necessary to introduce the necessary amount of each, and the machine will be preserved in good working order. Now bread and meat contain 'the plastic elements of nutrition' and 'the elements of respiration' in the exact proportions necessary, yet we see that a disease has been generated by such a diet, which the use of what in theory is a far inferior diet protects the individual from.

"I had intended to have followed up this subject, but the length to which this paper has already reached precludes the possibility of my doing so at present. I shall merely add, therefore, that the reappearance of scurvy in this country appears evidently to be due to the absence of the potato from the dietary of the poor; and that there can be no doubt that the free use of this vegetable is the best prophylactic against the disease, and has been the cause of its subsidence for so many years. The present epidemic will, therefore, serve to show that a diet which contains nitrogenized substances in the greatest amount, and in the smallest bulk, is not the most eligible for man, but that other circumstances must be taken into account if we expect to preserve the health."

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16. *On the Varieties of Headache.*—Dr. Samuel Wright, of Birmingham, in a clinical lecture delivered at Queen's College, gives the following account of the different varieties of headache:—

To give you some general notion of them, as we are yet dealing only in generalities,—suppose a patient comes to you complaining of headache. This is a very generic sort of term, and may involve a great variety of specialities, some serious, and others simple. One patient, we will say, is in his teens, or not far out of them, yet he looks older by many years than he ought to do. His face is blanched and parchment-like, cheeks sunken, eyes hollow, lustreless, and watery, and they never look fairly at you; the man is timid, nervous, shuns society, and has no inclination for active pursuits; he is subject to giddiness and forgetfulness, and has almost constantly a dull, heavy pain at the back of his head, perhaps extending down the spine, with a sense of weight and dragging of his legs. Here you have a nervous system enfeebled and shaken from causes you will easily learn if you pointedly inquire after the personal habits of the sufferer. Another complains of oppressive pain chiefly over his eyes, scarcely ever leaving him,

but distressingly aggravated at different periods of the day. It is probable, that these periods are subsequent to meal times, and that then the headache is attended also with drowsiness. The man is dyspeptic. He will tell you that his bowels are confined, and that he is troubled with wind. Look at his tongue, and you will see that it is furred with, most likely, a brownish patch in the centre. Percuss the right hypochondrium, and you may find a greater extent of dulness, or more tenderness, than natural. The condition of the great viscus here is wrong. Liver, stomach, and bowels, are the sources of that frontal headache. Another patient has pain in the forehead, but it is acute and lancinating, and not persistent. Its periods of accession and departure are pretty regular. Ask the precise spot of the pain, and you will have indicated the exit of the supraorbital nerve of either side, probably the left. Here you have a case of tic douloureux, which may have no obvious exciting cause, or may result from exposure to cold, from dyspepsia, from pregnancy, from uterine disease or disorder, &c. Another complains of aching all over his head, considerably increased by heat or cold, as the case may be. On further inquiry, you learn that the pain is chiefly superficial, and that to rub the patient's hair in different directions, sharply, is to agonize him. Here you have rheumatism of the cranial integuments. Look cautiously after this case. You may suddenly have a pain of a different kind, and deeper-seated, ushered in by screaming and shouting, followed by restlessness and delirium, with a glaring injected eye—the meninges of the brain will be suffering from metastatic rheumatism in its most active form. It was gout, thus transferred, that destroyed the valuable life of Dr. Ingleby, your late Professor of Midwifery. Another has acute pain darting through his temples and ears, especially when he gets warm in bed; at the same time, he has what he well describes as "gnawing pains" in his shin-bones; his nose is tender, and the roof of it painful; he has, or has had, sore throat, and there are copper-coloured patches about his body. This headache has its foundation in syphilis: mind your treatment, or the more delicate bones of the head and face may be sacrificed. I show you a characteristic specimen in illustration. See how the nasal and temporal bones have suffered here!

A delicate female complains of heavy throbbing pain over the middle, or at the back of the head. She has had it several months, more or less, and is liable to periodical exacerbations. The uterus has likely something to do with this pain. It may be a case of simple amenorrhœa; it may denote the climacteric period of female life; it may depend upon pregnancy; or the uterus may be undergoing some morbid change. This organ, however, may not be at fault: habitual constipation, which females are often in the habit of neglecting, may be the cause of the suffering, or it may be occasionally by hemorrhoids.

Such, and so many, nay, many more, are the varieties of pains in the head, having different causes, and requiring different forms of treatment.—*Medical Times*, Dec. 19th, 1846.

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17. *On the Semeiology of the Tongue.*—By SAMUEL WRIGHT, M. D., of Birmingham. Whilst some are disposed, in a prodigality of prejudice, to look upon the tongue as pathognomonic of nearly all the "ills that flesh is heir to," others make comparatively light of it, and consider its testimony as little trustworthy. To be amongst the best judges on the subject, is to belong to neither of these parties. As a rule, the tongue is a very faithful indication of the condition of the alimentary organs; but its evidences are not unexceptionable. A furred tongue, for instance, is a common indication of dyspepsia, but it is not a constant one. We sometimes meet with irritable nervous subjects, whose tongues are habitually furred, yet without any signs or symptoms whatever of gastric derangement. Others, again, will have clean tongues, and of natural redness, whilst they are suffering from severe stomach disorder. Various circumstances exert a remarkable influence upon this organ. Some people, otherwise healthy, get a furred clammy tongue, if their stomachs are empty a little longer than usual. Others have their tongues always furred when their stomachs are full; the coating continues only during digestion, and passes off as this function ceases. Mental and moral emotions affect the condition of the tongue in a singular manner; perhaps it never becomes morbid without the nervous function, in its higher offices, being

somewhat implicated. This would explain why a furred tongue is so rarely met with in the inferior animals. It may happen, and I think not unlikely, that in dyspepsia, the disorder the brain suffers, sympathetically with the stomach, has as much share as this organ itself in giving the tongue its characteristic coating. Certain it is, as I have said, that the feelings of the mind will, in a very few minutes, render a clean tongue a foul one. This is a subject which I have been induced curiously to inquire into for some years past, and I have seldom met with an exception to what I have just observed. Among the profoundly studious, amongst those terrified by sudden apprehensions, or shocked by the sudden advent of ill news; among the hypochondriacal, hysterical, gloomy, and desponding, you will find many examples of the mind's influence, in this particular, upon the body. A patient of mine, living near this town, will well illustrate what I say. He is a man of remarkably good constitution, and moulded like a miniature Hercules. Moreover, he has no incumbrances; an excellent mercantile business, that takes up little of his time, is partial employment for him, leaving him many leisure hours in every day that he he has some difficulty in disposing of. These he chiefly occupies in fancying himself the victim of all possible kinds of ailments. There is no disease in the nosology too much for his imagination. Of course, these things are all imaginary, and tiresome enough to listen to, when your judgment and sense of justice tell you that it is not a case for "physic and a physician." You will anticipate my saying that this gentleman is possessed of a most unfortunate nervous sensibility, which chiefly manifests itself in an ideal pathology, all reflected upon his own person. The peculiarity in point, however, which I chiefly wish to speak of, refers to his tongue. I had never seen him with this organ quite clean (although I have not once attended him for dyspepsia), yet the readiness with which it acquires a fur is very remarkable. Many times have I examined his tongue, and found it comparatively what it ought to be, before hearing a recital of his imaginary maladies; and after this, in some quarter or half an hour's detail, that same tongue has put on an aspect almost like that of flannel. I am at this time attending with Mr. Carter, a patient, one amongst the pitiable many who have seen better days. I shall take occasion hereafter to give you his case in due detail, but, for the present, I may observe that his tongue has the peculiarity characteristic of the one just spoken of. I should premise, however, that there is a fancied trouble in the one instance, and a matter-of-fact one in the other. Four days ago, in calling upon the gentleman I am now alluding to, one of the first things I did was to look at his tongue. I found it as usual, very pale, flabby and moist, but without any coating. After having made other necessary inquiries, I was informed by my patient that his heart, which has long been disturbed by mental emotion, the other night beat with unusual vehemence and irregularity. On my asking if he could account for it, he told me that he had just then received the distressing intelligence that an uncle, from whom he expected a competency, had not left him a shilling! This pitiable tale, told with much earnestness and visible feeling, occupied little more than twenty minutes; at the end of that time I again looked at his tongue, and *found it coated with a thick white fur!*

I mention these things, thus generally, to you, not only as items in pathology with which you ought to be made familiar, but also as suggestive of a discreet rule of practice, viz., to let the examination of a patient's tongue be *one of your first duties at his bedside.* My own experience, perhaps not inconsiderable on this point, enables me to say that in nine cases out of ten, and more especially among females, the tongue will be found, on first entering the room, in a very different state to what it is after half an hour's questioning and manipulation.—*Clinical Lectures in Medical Times*, Dec. 20th, 1846.

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18. *On the Use of Opium in Inflammation.* By W. H. Ranking, M. D.—The legitimate sphere of action of *opium*, in the treatment of inflammatory diseases, is, we conceive, a point upon which our notions have arrived at tolerable precision. Under whatever modifications of individual circumstances attending such diseases the beneficial action of opium is observed, one well-marked morbid condition has, according to my observation, existed in every case, and that is an excitement of the nervous system, altogether disproportionate to the exaggeration of vascular action. This excitement is not shown in the existence of sponta-

neous pain alone, as we know that that symptom may be insignificant, or altogether absent, in instances of the most extensive and destructive inflammation; neither is it shown mainly by increased sensibility to local impressions. The excitement to which I allude, exhibits itself in disorders of the sensory and motor functions of the nervous system chiefly, and consists in watchfulness, or transient delirium, irregular respiration, and especially in restlessness and jactitation. In this condition of things, whatever be the violence of the local inflammation, or whatever organ be affected (excepting the brain in some instances), opium is imperatively called for. In other words, whenever, during the existence of inflammation, symptoms indicative of a loss of balance between the nervous and vascular systems exhibit themselves, sedative medicines are demanded in doses proportionate to the nervous preponderance.

This want of balance declares itself, I believe, chiefly under two conditions—1st, the existence of inflammation in a constitution naturally excitable, or in which the general powers have been reduced by the disease itself, by treatment, or by contingent circumstances relating to food, air, &c.; and, 2d, in inflammation of organs or tissues, the implication of which, induces a state of things more or less approaching to that condition which, for want of a better term, we are in the habit of calling *shock*. In illustration of the first division, we may mention inflammation occurring in the hysterical constitution. In these cases, the phenomena which depend upon irritation of the nervous centres, take so decided a lead in the symptomatology of the case, that until they are controlled by opium, or some, under certain circumstances, more appropriate sedative, the inflammatory symptoms proper do not display themselves with their characteristic features. Again, inflammation may attack an ill-fed or previously debilitated individual; or the inflammation may have been too actively combatted by blood letting, mercury, &c., without reference to the deficient resiliency of constitution, which, in children, more particularly, may lurk behind an appearance ostensibly robust. In these cases there may exist from the first, or there comes on assuredly at no distant period, a condition in which opium becomes necessary to save life, to prevent, in fact, in the latter case, the anomaly of the patient "dying cured."

Under the second class of cases in which opium becomes a necessary part of the treatment, or is even mainly to be relied on, is inflammation of an organ or tissue largely supplied with ganglionic nerves, and in which, for this reason, the nervous system requires a large share of attention in the treatment of the case. Such is peritonitis or enteritis, either idiopathic or secondary; such are, also, one form of delirium tremens, diffuse cellular inflammation, and more particularly, phlebitis, the inner membrane of veins having the closest analogy to serous membrane in many respects, but especially in its large supply of organic nerves. In all these inflammations the usual battery of antiphlogistics is worse than useless, unless combined with the liberal exhibition of opium.

The symptoms either existing *ab initio*, or, as is more commonly the case, coming on in the course of the disease, which indicate the necessity for opium, can only become familiar to the practitioner by clinical observation; but as far as written descriptions can be relied upon, it may be stated, that the broad expression of this condition consists in a failure in the power or regularity of the pulse, pallor of the countenance, moist skin, (but not in all cases,) tendency to incoherence, with restlessness, sleeplessness, and, in an aggravated form, jactitation. This is the broad outline, so to speak, of the state referred to, but it declares itself in minor degrees, with which experience alone can render us familiar, and the appreciation of which is in itself sufficient, in many cases, to make the difference between a successful and an unsuccessful practitioner; for to persevere in antiphlogistic treatment, or to withhold opium, when these indications offer themselves, is to destroy the patient.

In the exhibition of opium when these symptoms show themselves in inflammation, I know of no drawback,—no contraindication which should weigh for one moment against its paramount necessity. Be the skin sweating or dry, the tongue moist or dry, the bowels constipated or not, opium must be given. The constipated bowels, which are regarded by some as inducing the necessity for hesitation in the use of the medicine, I look upon as of the least importance in the generality of inflammations; in some, as in enteritis, a quiescent state of the bowels is

even needful; and were it not so, the probability is, that if the case has been properly managed at first, such a clearance will have been effected as will render any risk from accumulation comparatively small.—*Half Yearly Abstract*, and *Prov. Med. and Surg. Journ.*, March 10th, 1847.

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19. *On Subacute Inflammation of the Kidney.*—John Simon, Esq., read to the Royal Med. and Chirurg. Society, June 8th last, a paper, the chief points of which were the following:—He first gave an exacter definition of the nature of glandular inflammation generally, showing how often no interstitial deposit of organizable material attends it, and, on the contrary, how much more constantly it evinces itself in modifying the physical properties of the secretion, by admixture of albuminous material, or otherwise. He stated that in the more complicated glands, many of the most obvious structural changes followed, and were caused by the lowest amount of inflammatory action; the secretion becoming first disordered, and then reacting often mechanically, on the structure of the organ. He illustrated this in the kidney, showing its subacute inflammation to commence as an epithelial disease, and to produce the final destruction of the organ, in a great degree, mechanically. After citing the causes of the disease, (among which he mentioned various fevers besides scarlatina,) he proceeded to describe the overabundant formation of modified epithelium, which is the first stage of the disease; stating that the tubes were bunged by it so as to be totally impervious, and were often so distended, that their limitary membrane would give way, and suffer its contents to be effused amid the surrounding blood-vessels. The microscopical examination of the urine would often show the specific cause of the disease—biliary matter, or oxalate of lime, or lithic acid, or fat, entangled or included by those well-known fibrinous casts of the tubules discovered by Dr. Franz Simon. These casts, and the more or less modified epithelium, were signs of renal irritation simply, the specific diagnosis being in each case furnished by additional matters which accompany their escape. He described the final shrinking and atrophy of the kidney as dependent on the gradual absorption of spoiled tissues—not to the contraction of effused lymph; and explained away the appearances which had led many observers to ascribe an unreal influence to the latter cause. He reviewed the subject of "Bright's disease," and stated his opinion, that in all instances of disease to which that name is applied, subacute inflammation plays an important part, and produces its characteristic symptoms. It had appeared to him, that this inflammation was always grafted on the fatty degeneration, so well described by Dr. Johnson. He recommended that the name of "Bright's disease" should be discontinued; that the term "scrofulous degeneration" should be used for one form, and the common one of inflammation for the other. The former had not appeared to him to lead to contraction of the kidney, which he had found mainly in the other class of cases. In tracing the inflammatory changes, he gave an account of the formation of renal cysts, believing their development to be an almost essential part of the inflammatory process; his theory of them being, that when the tubes have been ruptured, these cysts are developed from the effused epithelial germs which (by the destruction of their limitary membrane) are brought into unnatural circumstances. They had appeared to him an extravagant overgrowth of common nucleated cells, down to the size of which he had repeatedly traced them. From this remarkable smallness in which they commence, it seemed impossible that they could arise from the tubes; nor had he ever seen any such connection. In a few remarks on treatment, he expressed a strong opinion against diuretics, and much reliance in the sweating-bath. He spoke of the disease as one of almost incredible frequency, and said, that in a vast majority of cases the disease had been overlooked during life, while its traces in the dead body were such as might easily elude observation.—*Lond. Med. Gaz.*, July, 1847.

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20. *Albuminous Urine produced by the use of Cantharides.*—M. Bouillaud read to the French Academy of Sciences, June 8th, a note on the production of albuminous urine by the use of cantharides. Having had numerous cases under his care where albumen was detected in the urine, including true cases of Bright's disease, he determined to make some new researches concerning the different conditions or circumstances under which albumen may occur in the renal secre-

tion. For a long time he had noticed it in those cases where there was undoubtedly serious disorganization of the kidneys, or Bright's disease; but besides confirming his previous knowledge in this matter, his recent researches had brought to light one source of albumen in the urine which had escaped others, and that source existed in the action of cantharides. In many individuals, in whom there was no renal disease, he had large blisters placed on the skin, in those places where they had been previously cupped. In a man who had moderate pleuritic effusion, but whose urine contained previously no albumen, after he had been cupped, a blister was placed over the cut part. The urine passed after this, was put by, and on the next morning it was treated with nitric acid, when it became turbid and white, and altogether assumed the aspect and consistence of weak emulsion. The action of the cantharides on the kidneys, in this case, was evinced by the frequent desire to make water, the pain and agitation attending it; all which, as in other cases observed, passed off in twenty-four or thirty-six hours afterwards. This was the first case in which the experiment was tried; it was repeated in many others, all confirming the results above obtained. The action of the blisters in the way spoken of, was greater when applied to the skin after cupping, than when this was entire—a fact to be anticipated *à priori*. This curious form of albuminuria disappears at the end of two or three days, and is followed by no dropsy, as is the case where there is organic disease of the kidney.

In England, this action of cantharides in producing albumen in the urine, as well as in causing the exudation of blood, has been previously noticed. The investigations of the French physician, however, are confirmatory.—*Lancet*, June 26.

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21. *On the Relations of Rheumatism and Chorea, and their Treatment.*—An interesting paper on this subject has appeared from Dr. Begbie, in the *Monthly Journal of Medical Science*, for April last. This number of that Journal not having reached us, we take the following abstract of it from *Ranking's Retrospect*, vol. v.

[The intimate connection which exists between rheumatism and pericarditis, and between the latter disease and chorea, has been rendered familiar by the writings of Bright, Babington, Copland, and others; but it has not, perhaps, been sufficiently demonstrated, although the association might be predicted to exist, that the abnormal choreal movements and the inflammation of the serous membrane, were alike traceable to one and the same pathological condition, viz., that state of blood which characterizes the rheumatic diathesis. In the paper, of which we subjoin an abstract, this idea is strongly insisted upon. The author, after relating several interesting examples of the association of rheumatism and chorea in different members of the same family, criticizes the explanation most in vogue respecting this coincidence, such as metastasis, extension of irritation to the spinal cord by the phrenic nerve, &c., offers in their stead the following sensible observations:—]

"Keeping these facts in view, and calling to recollection the several cases which have been recorded elsewhere, I cannot help coming to the conclusion that the simple and true view of their relation is to be found in the morbid condition of the blood, which is admitted to exist in the rheumatic constitution; and the explanation will equally apply to chorea occurring in families or individuals inheriting the rheumatic diathesis, to chorea occurring in connection with rheumatism, but without the cardiac complication, and to chorea associated with pericarditis or endocarditis, or both; the inflammatory affections of the fibrous tissues, as well as the spasmodic affections of the muscles and tendons, originating in the same specific disorder of the circulating fluids . . . Those remarkable cerebral affections, the wild delirium and violent mania, the coma, the fatuity, which not unfrequently occur in the course of rheumatic fever, or follow in its train, and which have usually manifested themselves along with the cardiac complication, causing doubt and perplexity in the mind of the attendant as to the real organ affected, admit, I apprehend, of the same explanation—the altered nature of the blood circulating through the brain, and not, as has been supposed by Dr. Watson, the embarrassment of the circulation from obstruction of its central organ; for in some instances, violent delirium has preceded the earliest symptoms of heart affection, and death in other cases has ensued on rheumatic attacks, accompanied by evidence of cardiac disease, but where the state of the brain was the chief

cause of apprehension, and dissection has shown nothing more than a row of small, slender, bead-like warts on the mitral valve. Surely, in such cases, it would be well to look to the altered state of the blood, as the common cause of the rheumatic affections of the parts, the inflammation of the membranes of the heart, and the disorder of the nervous centres.

[The treatment of the two affections, acute rheumatism and chorea, are next pointed out in the following words:]

"Rheumatism, however, cannot be regarded as an active inflammation, and treated accordingly. It must be rather considered as a disease dependent upon a specific morbid condition of the blood exciting inflammatory action, particularly in the fibrous tissues, and new remedies ought to be applied, with the view of lessening the amount of circulating fluids and altering their constitution. For this purpose, moderate blood-letting and calomel and opium, appear to be the most appropriate treatment; and I have repeatedly observed, particularly in cases which did not call for immediate loss of blood, that after persevering in the use of mercury for some days, apparently without benefit, the abstraction of a small quantity of blood has been attended with immediate and permanent benefit. I have never seen the rheumatic inflammation of the joints translated to the heart in consequence of blood-letting, and cannot but fear that the prevalent notions regarding metastasis have led to serious errors in the treatment of the disease. If we bear in mind that a third of all those affected with acute rheumatism also suffer from inflammation of the heart, and that a large number also labour under inflammation of the pleura and lungs, and not a few under alarming disorder of the brain, we shall be desirous to employ all the means in our power to overcome as quickly as possible that condition of blood which, as long as it lasts, is productive of such serious consequences to vital organs. I have often been disappointed in colchicum, and doubt its efficacy in true fibrous rheumatism, though I have been more sensible of its effects in the synovial variety, that form which is known as rheumatic gout, and in which purging with full doses of calomel, aided by other purgatives, so as to produce copious bilious stools, is also found useful."

[Respecting the treatment of chorea, the author observes:]

"I have only to speak of the efficacy of one agent, having never had occasion to test the powers of any other; and it deserves remark that this remedy so available in chorea, is scarcely less so in chronic rheumatism. Arsenic is a most valuable and powerful remedy in these as in other diseases, and it is much to be regretted that so many are deterred from employing it, in consequence of the sickness and other unpleasant symptoms which it is apt to produce. Dr. Babington has noticed arsenic as the most powerful of all the remedies for chorea, and Dr. Hughes (see Abstract, vol. iv., p. 28) regards it as slightly inferior to the other mineral tonics; but he only employed it in seven cases, in five of which it failed or disagreed. In the experience of thirty years, and in a large number of cases, I have never known it to fail. It has certainly disagreed in several instances, but I have not abandoned it on that account. Its use has been suspended for a few days, and resumed perhaps to be suspended again; but I have invariably found that the choreal movements have been more and more modified after each, till at last the disease has yielded entirely."

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22. *A few Hints on Constipation.* By Dr. Robert Dick.—In all cases of constipation or torpor of the bowels, attention to the cœcum is important. It is here that fecal accumulations are, on several accounts, apt to take place. The circumstance of the large bowel here forming a cul-de-sac, out of which, moreover, the fecal matter during fourteen or sixteen of the twenty-four hours, can only escape by a course counter to gravity, disposes not a little to the collection there of excrement. And, indeed, in most cases of constipation, in cases of chlorosis, &c., we shall generally both see and feel a fulness at this part, sometimes of remarkable and even alarming extent and hardness. There is generally also considerable tenderness of the part; so that handling or pressure of it causes to the patient, not acute pain perhaps, but an unbearable uneasiness, which prevents you from making the examination freely. And I have no doubt that, in not a few cases, a state of chronic irritation of (sub-) inflammation and even of ulceration of the mucous membrane of the cœcum, is induced, from the prolonged contact of hardened feces, which, moreover, has be-

come preternaturally fœtid, and undergone certain irritating chemical decompositions. In such circumstances, either round or irregular masses of a fatty-looking substance may often be detected in the evacuations. This consists of inspissated mucus, secreted by a surface highly irritated or sub-inflamed. A slight prolongation or increase of such irritation will convert this inspissated mucous discharge into a purulent one.

The fact of accumulation in the cœcum being ascertained, a bolus of pills, containing ten or fifteen grains of blue pill, aloes, and hyoscyamus, in equal parts, are to be given at bed-time, on one, two, or three alternate nights. Next morning, a dose of castor oil is to be taken, and means afterwards are to be used, both dietetic and purgative, to keep the bowels patent, and prevent a recurrence of the impaction of the cœcum.

Injections are of much use in this complaint, though only, indeed, of temporary utility. They should be of an oleaginous quality, and be large in quantity, and either during, or subsequently to, their being administered to him, the patient should lie on his right side, so as to promote the passage of the injection to the ascending colon and the cœcum. The right groin should be gently, but effectually, kneaded, as it were, by the hand of the patient himself, or of an assistant. In this way, lumpy masses of feces, which had obviously accumulated in the cœcum, may often be brought away, to the great relief of the patient. A tablespoonful or two of oil of turpentine added to the injection, adds much to its efficacy. This oil seems to exert a most salutary influence on the colon.

A German lately came to London, who professed to cure cases of constipation without the aid of medicine, and simply by friction. He rubbed and kneaded the abdomen, first over the small intestines; then, beginning from the right groin, he continued the process all along the course of the colon to the left groin. By this means, he, probably, actually forced along the fluid feces, and, at the same time, stimulated the muscular coat of the intestines to contract. He devoted several hours, on successive days, to this manipulation, and, as I was informed, often succeeded on the second, third, or fourth day, even in some obstinate cases.—*Lancet*, Jan. 9th, 1847.

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23. *Case of Jaundice—Fungous Growth round the Orifice of the Ductus Choledochus—Dilatation of the Hepatic Ducts in the Liver.*—At a meeting of the Pathological Society of Dublin, Dr. Stokes presented a series of recent specimens, portions of the liver, stomach, and duodenum of a patient, whose case he considered to be unique, as regarded its duration and the extraordinary combination of symptoms which it exhibited. He knew of none similar on record; he had met with none similar in practice. The most obvious disease in the case was jaundice—a complaint to the history of which this case supplied some important additions. The subject of the case was a gentleman, who described himself to have been in uninterrupted good health up to the age of 68. He was of spare habit, temperate, and active, but latterly had taken less than his usual exercise. All through his illness he was seen by Dr. Stokes. He had gone to bed in a state of apparently perfect health. During the night he felt an extreme itching of the skin. This subsided during the day, but returned during the following night. Dr. Stokes was then called in. He found the skin cool, the pulse quiet, the appetite good, and there was no complaint, except the violent itching of the skin at night; there was a red-coloured sediment deposited from the urine. He continued for a week without any alteration in his symptoms; the stools were natural; there was no appearance of jaundice. At a consultation on the case, it was determined to be irregular gout—a conclusion principally founded on the absence of local symptoms. After a week had elapsed from the first indication of illness (January), he suddenly became deeply jaundiced. There was no fever, and the appetite remained unimpaired during three weeks subsequent; then an intermittent fever set in, which continued, with some intervals of remission, up to the time of his death. This fever, Dr. Stokes considered, evidently depended on the presence of free bile in the general circulation. Its accession was very sudden; there were no premonitory symptoms; it commenced with lassitude, rigors so severe as to shake the apartment, and which lasted for an hour, and were succeeded by heat; but there was no sweating stage. During the fever the jaundice increased. The fe-

brile attacks occurred sometimes on every second, sometimes on every fourth day; but whether the type was tertian or quartan was not determined. The feces were white. Under the use of mercury and bark he got better, and in the month of April appeared well. The stools were coloured with bile; the urine was clear; the febrile symptoms had ceased. He was then sent to the country for the summer; but about the end of May he went to London, and, while there, had another attack, the immediate cause of which was some excess of diet. These attacks were from that time very frequently repeated; they were excited by various circumstances, such as constipation, errors in diet, slight exposure to cold; but latterly they came on without any apparent exciting cause. After his return from London, a train of new symptoms appeared; he was exhausted by the journey, and on his arrival seemed more dead than alive; his discourse was quite unintelligible; he was, in fact, talking gibberish, yet he was not delirious; he had rigors, but these ceased after he had been some time in bed, and he became able to speak. Every second day there was a violent paroxysm; the stools were hard and white; constipation now ensued; severe uneasiness was felt about the fundament; purgatives gave no relief; there was constant tenesmus, and straining to pass matter from the bowels after the exhibition of purgative medicines; but only thin matter, in small quantities, was discharged; the jaundice and fever increased in intensity. On the second day of this constipated state, Sir P. Crampton inserted an instrument into the rectum, with which he removed some hardened feces; this was followed by seven or eight copious stools, and the patient from that time began to recover. The amendment continued for several months; he became fat and strong, had good sleep and spirits, until he became distressed at the death of some friends, when the symptoms of his illness reappeared. On every day, or sometimes every second day, he had a febrile attack, but without perspiration; this continued during a year. Before each of the attacks in this period, he had a sense of great oppression in the head; during the intermissions the tongue was clean, the abdomen in a normal state, and the jaundice had almost entirely subsided. Of late there appeared an irritable condition of the urinary organs; there was sometimes a copious discharge of urine, then suppression, and at the same time anxious desire to pass water; great irritation of the bladder. The treatment adopted was various; relief was latterly obtained by the use of blue pill, together with the sulphate of quinine. During the last eight days of his life, the fever continued without intermission, and he died comatose. There had been no physical signs of any organic disease; Dr. Stokes therefore expected that some very local disease would be found to have given rise to all this illness. On examination the liver was not at all enlarged, but there was a diseased state of the mucous membrane of the duodenum, about the orifice of the duct; the ductus communis was enlarged in calibre, and so were the biliary ducts all through the liver; there were several elevations or prominences on the surface of the liver, formed by true aneurisms or dilatations of the hepatic ducts. This circumstance, Dr. Stokes remarked, he had before met with; and he also referred to a paper by Mr. Lloyd, in the Medico-Chirurgical Transactions, in which a similar lesion is described. The orifice of the duct in the duodenum was surrounded by an irregular fungus, resembling an old cicatrix; the gall-bladder was distended with bile, its coats were thinner than natural; the ductus communis was greatly dilated, but the obstruction to the flow of the bile had never been complete; the orifice, though obstructed, remained pervious; none of the other viscera presented anything abnormal.—*Dublin Quarterly Journal of Med. Science.*

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24. *Obliteration of the Spermatic Ducts.*—M. Gosselin read a memoir before the Academy of Medicine on spermatic obliterations, in which he proceeded to show that the ducts destined for the passage of the semen were liable to become obliterated, just as the ducts for the transmission of the bile, urine, and saliva. The obliterations which he has met with have been found in, 1, the vas deferens; 2, the tail, or globus minor of the epididymis; 3, the head, or globus major of the epididymis; and 4, the seminiferous vessels of the testicle. M. Gosselin only once met with obliteration of the vas deferens, when it extended from the commencement of the canal to its pelvic portion; there was not obliteration merely, but a disappearance of the organ in this part of its course. The canal of the epi-

didymis presented a varicose enlargement, and contained a great many spermatic animalcules, whilst the vesicula seminalis was devoid of them. Obliterations on a level with the tail of the epididymis were demonstrated by the impossibility of passing fine injection along the tubes; by dissections which have displayed, at the part, a fibro-cellular, impermeable substance; by the varicose dilatation of the epididymis; and by the existence of spermatozoa in this part, and not beyond.

The memoir terminated with the following conclusions:—1, the vas deferens may be obliterated, and cease to carry the semen on towards the vesiculæ seminales; 2, the canal of the epididymis may become obliterated about the tail of the organ; 3, in these two cases the duct, whose convolutions form the epididymis, may dilate, and becoma varicose, or may preserve its normal character; 4, the testicle, in these cases, does not constantly become atrophied; it continues to secrete, absorption relieving the consequent engorgement of the duct; 5, there may exist partial or temporary obliteration about the tail of the epididymis; 6, obliterations may occur about the head of the epididymis, but these do not present an obstacle to the course of the seminal secretion; 7, there may exist total or partial obliterations in the seminiferous vessels of the testicle.

We may suppose the obliterations in the course of the efferent ducts of the testes, which M. Gosselin has examined, to be, perhaps, not an infrequent cause of impotence. We now want further investigations to demonstrate to us the cause of such obliterations,—whether chronic inflammation from over-excitement or from injury may be a cause; also how such obliterations may be detected during life, whether we can derive any assistance in diagnosis from a varicose condition of the epididymis; and how far curable some of the cases of obliteration may be, for some we may determine to be incurable.—*Lancet*, July 31, 1847.

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25. *Sulphuric Ether in the Treatment of Intermittent Fevers.*—Dr. CHALLETON states that he has uniformly succeeded in curing intermittent fever, which has appeared in the neighbourhood of Gannat, by administering half a teaspoonful of sulphuric ether at a dose, either on the occurrence of the shivering fit, or at intervals of four hours on the day before the attack. Several physicians in the neighbourhood have adopted this mode of treatment with satisfactory results.—*Lond. Med. Gaz.*, Aug. 1847.

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26. *Galvanism in Aphonia.*—The following is the description of one of the earliest modes of applying galvanic action to the treatment of disease, and on account of the long continuance of its effects, is thought by Mr. Donovan to hold out considerable advantages:—In the case of a young lady, affected four years with hoarseness, and more or less complete aphonia, blisters, mercurials, &c., had been used without any relief. Her physician, Dr. Grapengiesser, then thought of increasing the action of blisters by galvanism, and accordingly, having vesicated each side of the larynx to the size of a shilling, he covered the excoriated spots on one side with a zinc plate, to which a wire of the same metal was attached, and on the other with a piece of silver. As soon as he brought the two plates in contact, a burning sensation at those spots arose, and the larynx heaved up and down convulsively, with loud sobbing. On alternately breaking and re-joining the contact, these motions became so violent as to be almost insupportable. After this process had been continued for a quarter of an hour, a watery humour began to run from the excoriated surfaces. The apparatus was removed, and towards evening she began to speak more audibly and the improvement continued next day, but was lost again on the fourth or fifth day. The process was then repeated, with the same results, and the apparatus was left on all night, with the effect of permanently restoring the voice.—*Dublin Quarterly Journal of Medical Science*, Feb. 1847.

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27. *Effects of Electricity on the Human Organism.*—M. PALLAS, chief physician of the French armies in Algeria, communicated to the Academy of Sciences, the results of his most recent researches as to the influence of atmospheric and terrestrial electricity on the organism, and as to the power of insulation in modifying its injurious effects. He concludes his researches by the following summary of results:—

1. The greater number of diseases, and more particularly those which involve the nervous system, (belonging to the class of neuroses,) are caused by the excessive influence of general electricity, of which stormy clouds and marshy localities are the most abundant sources.

2. Marshes, by their geographical constitution, and their effects on the animal economy, offer the greatest analogy to the galvanic pile. Indeed, their noxious action is by so much the more formidable, as the water which exists in them holds in solution organic or saline matters; and this explains why salt-water marshes, and those near the sea-coast, are more especially injurious to the health. The drying up of marshes, or their submersion, presents us with similar conditions, as when a galvanic pile is deprived of its liquid, or totally immersed; in either way its action being rendered insignificant, or being quite annulled.

3. The works of physicians and physiologists have demonstrated that electricity produced by machines has a special action on the nervous system. Experience and rigorous observation of facts prove, that the maladies which are developed in the proximity of marshes are always, primarily, of a nervous type; and that when they become inflammatory, it is by the reaction of the nervous system on the heart and entire vascular system, whence arise, consecutively, local or general inflammations.

4. Nervous maladies and intermittent fevers being occasioned, not by the action of a miasma, which has never been detected either in the air or in the water of marshes, but by the excessive (exaggerated) influence of electricity, some means which have in view the modification of this morbid influence, should naturally and rationally be preferred.

5. Electrical insulation happily fulfils this indication. The insulation may readily be effected by fitting on to the ordinary forms of beds, feet made of glass or of resin. A great number of observations have demonstrated to M. Pallas, that all the sick who have been thus insulated, have been cured or relieved of their severe diseases, many of which had previously resisted all known means of cure.

The plan of treatment here advised, has the strong recommendation of cheapness and the avoidance of trouble; but we fear that neither the treatment, nor the hypothesis on which it is built, will bear the test of experiment and experience. The prevalent and active source of so many diseases which infest mankind, and which M. Pallas thinks to be found in electricity, we should rather admit to be hidden at present; but judging from what we do know of the laws to which even this subtle agent, the source of fevers, &c., must conform, there is a probability against its being electricity, and in favour of its being a miasm issuing from the earth under certain conditions, and we may, perhaps, proceed so far as to predicate a peculiar electrical state, as one of those conditions. Neither is it any argument against the existence of a miasm, that it has never hitherto been made cognizant to our senses, save by its effects, as brought forward by M. Pallas.—*Lancet*, June 26.

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28. *Benzoate of Ammonia in Gout.*—Dr. Seymour (*Thoughts on Several Severe Diseases, &c.*) states that he has frequently used this medicine in cases in which the small joints were red and swollen, or where fluid was deposited in the joint of the great toe, and also in cases where the lithate of soda existed in the joints of the fingers, and that it was decidedly useful. He thinks that early depositions have been arrested, and large depositions diminished, under the use of this medicine. He regards it as a good diuretic, and as especially adapted to those cases of dropsy in which an irritable stomach renders the employment of ordinary diuretics impracticable. He has seen also the albumen in renal dropsy diminish under the use of the benzoate of ammonia.

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29. *Binoxide of Mercury in Skin Diseases.*—M. Ibreisle has reported the results of his experience in the use of the binoxide of mercury as a local application, in diseases of the skin, especially those of a strumous or syphilitic origin. Indolent ulcers of the extremities have frequently yielded to this application, as have also phagedenic ulcerations. The author regards this preparation as an excellent remedy for the removal of the indurations which accompany syphilitic ulcers; he has likewise used it with success in pustular syphilides.

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or five of lead. Some caution appears to be necessary in its employment.—*Gaz. Méd. de Paris*, March 8th, 1847.

30. *Treacle as a Local Remedy for Rheumatism.* Mr. Vines stated to the Reading Pathological Society, a case where a patient was suffering from rheumatic pains of the legs, and had been treated by eminent men in various ways without relief, when an old nurse recommended the legs to be wrapped in flannel soaked in treacle for some days, which procured him complete relief. He therefore thought there was some sedative influence in the treacle.—*Prov. Med. and Surg. Journal*, Aug. 25, 1847.

31. *Influence of Quinine on the Volume of the Spleen in Ague.*—M. Valleix, physician of the Hôtel Dieu, has directed his attention to the action of the sulphate of quinine on the volume of the spleen in intermittent fever. He has done so to test the accuracy of a statement made by M. Piorry, that the disappearance of the paroxysm coincides with the diminution of the volume of the spleen; that this organ sensibly diminishes in thirty or forty seconds after the administration of a full dose of quinine, in solution, and acidulated; that the diminution goes on very rapidly if the quinine be continued in a sufficiently large dose. M. Gouraud having examined into this matter, however, states that he has not found the spleen thus diminish, but that, in consequence of an accumulation of gas in the stomach, from the ingestion of the quinine, the left hypochondrium is rendered sonorous, and the dulness over the spleen becomes masked. These opposite statements M. Valleix has kept in view in making some fresh observations. He narrates a case, and its course; quite a simple case of ague, occurring in a young and robust man, who had never suffered before. It was a recent case, and there were no evidences of organic disease in any organ; the spleen had undergone very considerable enlargement, being readily perceived through the abdominal wall, and therefore its size could be estimated with the greatest precision. The sulphate of quinine, although given in a very strong dose of thirty grains, and acidulated, so as to render the salt a bisulphate, did not act, as represented by M. Piorry, on the volume of the spleen, neither at the end of forty seconds, nor of twenty minutes, nor even of twenty-four hours. The medicine also had no such power when given in still greater quantity, but divided, during the day, into several doses, and continued on succeeding days. But after the application of cupping-glasses and leeches over the splenic region, the volume of the spleen, on the contrary, diminished rapidly, although the dose of quinine was abated. Lastly, notwithstanding the persistence of the splenic engorgement, the fever was cut short, and there was no trace of a recurrent paroxysm.

Another equally uncomplicated case occurred to M. Valleix, and the same method being tried, was attended by the same results. It must, however, be mentioned, that three days after the first dose of quinine, a slight diminution of the spleen was noticeable; but this little decrease, which perhaps, too, was partly owing to a bottle of eau de Vichy which the patient took, was lost sight of when compared with the rapid diminution which followed two days afterwards, when cupping-glasses were applied over the spleen, and which continued to go on. In this case, also, as in the preceding, although the enlarged spleen remained, the fever was removed.

The third case differed from the two preceding, in that it was of older date; but there was no essential difference in the effects of the treatment. The spleen remained unaffected in size during the first day, when quinine alone was given; but quickly decreased after local bleeding, although the dose of quinine was lessened. The fever was removed before the engorgement of the spleen had subsided.

Thus these observations contradict the assertions of M. Piorry both as to the coincidence of the disappearance of the fever and the decrease of the spleen, and as to the immediate and prolonged influence of quinine in diminishing the splenic congestion. M. Valleix also confirms the observation of M. Gouraud as to the formation of gas in the stomach upon the quinine being swallowed, augmenting the resonance over the left hypochondrium, and so hiding the dulness over the solid spleen beneath to a slight extent; not so much so, however, but that palpitation and percussion will readily detect the engorged organ.—*Lancet*, September 4th, 1847.

32. *Treatment of Inflammatory Induration of the Cervix Uteri by deep Cauterization with Potassa Fusa.*—Dr. SIMPSON's own observations fully confirm the recorded opinions of Dr. Bennet and others regarding the general dependence of leucorrhœa upon inflammatory ulceration and induration of the cervix uteri. He has found inflammatory enlargement and induration of the tissues of the cervix very frequent in practice, and existing, in fact, in most cases of very chronic and aggravated leucorrhœa. In practice he has seen it mistaken for the induration and ulceration of carcinoma, &c. Formerly, in the treatment of these common cases, Dr. S. employed the frequent local application of leeches, and counter-irritation to the sacrum, &c., with the use of pessaries of mercurial and iodine ointment, keeping the indurated tissues imbedded in these applications, &c. The cure in this way is tedious, and months are often required before the indurated parts became reduced. Various local escharotics, partly to destroy the indurated tissues by direct decomposition, and partly to soften down the remainder by new inflammatory action, have been in modern times employed for the same purpose, and with much more certain and expeditious effect. Dr. S. has in this way employed, in a number of cases, nitrate of silver often applied, Vienna paste (*potassa cum calce*), and nitric acid. He states the particulars of a case which he had treated successfully four years ago with nitric acid, and he had lately seen the patient in perfect health; it was at the time supposed that she had cancer uteri. Latterly, Dr. S. has abandoned these and other escharotics, and now always uses the common *potassa fusa*. He has found it far more manageable, speedy, and certain than any other method. He uses it of course through the speculum, applying a stick of it freely with a proper caustic holder to the ulcerated and indurated tissues. It requires to be rubbed or held *strongly* for a time against the part which is to be destroyed. In general a piece three-quarters of an inch, or an inch long, is melted down. The decomposition produced by it often causes a hissing sound. If the induration is extensive, and the whole cannot be removed at once, increased action and absorption are set up in what remains, and the parts adjacent become softened and diminished in size. Absorption in this way is truly one of the results or consequences of inflammation, though still an undescribed *termination*. In some aggravated cases, two or more applications of the caustic are required at intervals of eight or ten days. Dr. S. has never seen pelvic cellulitis, or any other bad result follow. The appearance after the operation is as if a portion had been clean cut out with the knife. A large quantity of vinegar and water is immediately thrown up through the speculum to neutralize the potassa, and prevent it from injuring the sound parts. A copious purulent discharge usually follows for several days, requiring the use of astringent washes, or zinc ointment pessaries. When the whole of the induration is once removed, the remaining ulcer heals rapidly and permanently. An ulcer over an indurated part may be cicatrized, but it is almost certain to break out again and again till the induration itself is reduced.—*Month. Journ. of Med. Sci.*, July 1847.

33. *Death of a New-Born Child from Hypertrophy of the Thyroid Gland.*—A robust and full-grown infant, born in a state of asphyxia, continued to respire in an abnormal manner even after the removal of the asphyxia. A dose of squill juice occasioned vomiting, after which the child fell asleep. On awakening, the suffocative attack was renewed, the voice being hoarse and crowing. Deglutition was also impeded, the food being swallowed with difficulty and with perceptible noise. There was manifestly some permanent obstacle of a kind at once to narrow the wind-pipe and the gullet, in confirmation of which a perceptible swelling occupied the neck. On the fourth night a suffocative attack put an end to life. The dissection gave the following light on the case:—The thyroid gland, engorged with blood and composed of a very compact parenchymatous substance, was so much enlarged as to occupy the whole anterior region of the neck—its two horns extended above the lateral parts of the hyoid bone; its lateral borders reached beyond the anterior margins of the sterno-mastoid muscles; the upper concave edge covered the larynx; its lower concave edge the upper part of the sternal manubrium. Behind the thyroid gland there were seen two thick muscles surrounding the windpipe and throat throughout. The most considerable stricture of the windpipe was at its lower part, while the rima glottidis were perfectly normal.

At the bifurcation of the trachea a great quantity of dirty milk-like mucus was met with. As to the remaining organs, the thymus was less developed, both the lungs of normal appearance, with the exception of the top, which exhibited several more compact, somewhat liver-like, dark-red spots. The heart was deep-red, and as well as the pericardium, was engorged with venous blood. In the pericardium there was about a spoonful of yellow serum. The valve of the foramen ovale was not yet quite closed. The main vascular trunks were of healthy structure. We learn from these post-mortem appearances that in this case the pulmonary circulation had not yet been fully developed, in consequence of which the brain became gorged with blood, and at last apoplectic.

There are two diseases which might have been confounded with that just described, asthma stridulum and croup. These differ, however, in many points; the former by its more tardy appearance, the non-permanency of the dyspnœa, the tetanic spasm, and complete interruption of the respiratory process at the close of life; the latter by the normal deglutition, and in common with the former, by its more tardy appearance.—*Ibid.*, from *Caspar's Wöchenschrift.*

34. *Case of Ischuria Neonatorum.* By Alois Bednar.—A child, who died on the 13th day after birth, during the last five days while he was under the care of the reporter, passed no urine. It does not appear whether or not he had passed any on the previous days. The dissection showed the following very interesting state of the parts. The caput gallinaginis, instead of passing, as in the normal structure, into a prominence, ending in two branches which again divide into a great number of little folds, was here branched at its anterior extremity, into two mucous valves, running along the walls of the urethra, from behind downwards and forwards, towards the middle space where they united together. These two crescentic valves, with their concavity looking towards the bladder, included between their combined terminations, a very narrow fissure running necessarily from behind forwards. From the structure it is evident that whenever the bladder contracted on the urine, the cavity of the valves became filled with it, and the fissure between them being completed by their distension, not a drop could issue beyond. It was easy to pass a thick probe from the anterior part of the urethra into the bladder, but when the probe was passed from the bladder, it was impossible to reach the urethra without the assistance of the eye, the probe being otherwise continually thrown back by the valves. As to the surrounding parts, the rest of the urethra and genitals were quite healthy; the urinary bladder was hypertrophied, its usual thickness being trebled, the thickening being principally in the muscular coat. On the inner surface of the bladder there was seen an incipient tubercular tissue, moreover some little pervious dilatations, and a greater sac with a sphincter-like opening at the termination of the left ureter. The remaining portion of the ureter was dilated and thickened, the renal substance was atrophied. As it cannot be assumed that the high degree of hypertrophy and dilatation of the urinary organs had been developed during the short continuance of life, it is very probable that as soon as the secretion of urine commences, there is a necessity for its evacuation by the urethra. And hence, also, it is to be inferred that an empty urinary bladder is not to be regarded in forensic medicine as one of the evidences of an infant having lived after birth.—*Ibid.*, from *Zeitschr. d. Gesellph. d. Arzte Zu Wien*, Feb. 1847.

SURGICAL PATHOLOGY AND THERAPEUTICS, AND OPERATIVE SURGERY.

35. *Influence of the Laws of Gravity on Circulation and Local Inflammation.*—Prof. Gerdy read to the French Acad. of Medicine, May 25th, an interesting paper of a practical nature on this subject. The author remarked that the influence of the laws of gravity on the circulation, was often evident in the production or increase of cephalalgia, of œdema of the extremities; that it was sometimes an obstacle to the cure of hydrocele after operation, as also to absorption of hydarthrosis of the knee or ankle; that it occasioned the displacement and extension

of ecchymosis, and favoured the development of uterine hemorrhage, of hemorrhoids, and of varicose veins; that diffused or circumscribed phlegmonous inflammation, could frequently be ascribed to no other cause, and consequently, that those parts of the body which their dependent situation most exposes to these various affections should, on the imminence of any one of them, be placed in an elevated, or, at the least, in a horizontal attitude. This was a precept of general practice, applicable to a vast number of different disorders, and which should, therefore, never be lost sight of.

M. Nacquart expressed a regret that Professor Gerdy had not established a comparison between the influence of position and that of compression on inflamed parts. The method of compression with strips of adhesive plaster, had been by error attributed to the British surgical school, but had, in reality, been introduced into practice by French surgeons more than thirty years ago. M. Nacquart had seen it applied in Paris, and he thought it might with advantage be substituted to elevation of the limbs, to which M. Gerdy had granted so much influence in the treatment of phlegmonous affections.

M. Malgaigne agreed with M. Gerdy in praising the results obtained in inflammations, by elevation of the part. The method was in its nature so simple, that it might be supposed to have been suggested in the most elementary works on surgery; such was not, however, the case. The manner in which a violent local inflammation might be reduced in a few hours, under the influence of a mere change of position, was in itself something marvellous. It was a fact of every day observation, that when a whitlow caused excessive pain, the sufferings of the patient might, in a few minutes, be relieved by elevation of the hand. M. Malgaigne then related several cases illustrative of the same fact, and made some further remarks on another point connected with the subject—viz., the possibility of arresting hemorrhage in one organ by elevation of another part—for instance, epistaxis was often stopped by raising the arms. Here, again, most probably the influence of the laws of gravity on the circulation of blood, was the cause of the beneficial effect of this practice; and so convinced was M. Malgaigne of their efficacy, that when, after the operation for hydrocele, the inflammation of the tunica vaginalis did not occur within the usual time, he prescribed merely that the scrotum be abandoned for a few hours to its weight—a plan which was invariably followed by the desired congestion of the parts.

M. Gerdy could not think that compression, with strips of adhesive plaster, might be substituted for position. In fact, this compression often did more harm than good; whereas elevation of the limb constituted an incessant withdrawal of blood from the part, without loss of the circulating fluid. M. Gerdy concluded his remarks by stating that the advantages of his method were particularly distinct in cases of atonic ulcer of the leg.—*Medical Times*, June 5, 1847.

[The late Prof. Physick, of the University of Pennsylvania, was accustomed, in his lectures, to lay great stress upon the importance of position in the treatment of local inflammations, and many years ago inculcated the very views now put forth as new by Prof. Gerdy and M. Malgaigne.]

36. *Wound of the Brain—Recovery.*—The *Journal de Médecine, de Bordeaux*, contains the following interesting case of a wound of the anterior lobe of the brain, in a child, not followed by any mischief. A child, aged twelve, made a false step, holding at the time an open knife in his hand. In the fall, the knife being directed towards the head, rapidly penetrated through the left orbit. The lad did did not raise any cry, but ran into the infirmary of the establishment in which he lived, the knife still sticking in the head. When M. Gintrac was called to him, he found him laid upon his bed without consciousness, the skin cold, and the face pale, the pulse imperceptible. The knife had passed between the globe of the eye and the upper eyelid, about midway between the orbital angles, and had perforated the orbital portion of the frontal bone, in which it was tightly fixed. Its direction was oblique—viz., from below upwards, and from before backwards, forming with the facial line an angle of about 45°. The back of the blade was next the globe of the eye, and pressed it downwards and backwards, while the cutting edge raised the upper lid. M. Gintrac sought at once to remove the knife; his first attempts were fruitless, but by persevering for five minutes, and with the

help of another, it was extracted. The entire length of the blade was three inches and one-fifth, its breadth two-fifths of an inch; it had penetrated, measuring from the margin of the eyelids, two inches. Whilst the proceeding was going on, the lad remained quite insensible. Compresses, with cold water, were ordered to the eye and forehead, and sinapisms to the feet. Between four and five hours afterwards, the boy had recovered his senses, spoke freely, suffered no headache, and complained only of a smarting in the interior of the orbit; the pulse began to rise, and there was some swelling of the upper eyelid, but pressure on it caused no pain. He passed a good night, sleeping calmly. The next morning the pulse was 60, and regular; intellect clear; answers naturally; no headache; some heat about the orbit; the eyelids not more swollen.

During the following days no new phenomenon presented itself; the tumefaction of the eyelids gradually decreased, and after the eighth day entirely disappeared, leaving the eye perfectly sound. All that was to be seen was a slight scar on the margin of the tarsal cartilage of the lower eyelid, made during the rapid passage of the knife past it. The patient was kept in bed fifteen days, during which his diet was very low; after this he resumed his studies and his ordinary employments.

To determine the question which necessarily arises in this case, as to whether the knife entered the brain, M. Gintrac had recourse to experiment: knowing the depth which the knife had penetrated in the above case, and the direction it took, he carefully drove, by a hammer, the same knife through the corresponding place in the orbit of a dead child, aged eleven years; then, having opened the head, he assured himself that the instrument had traversed the vault of the cranium, the membranes of the brain, and had penetrated into the anterior cerebral lobe nine-thirteenths of an inch. M. Gintrac would reject the notion as impossible, that the dura mater, with the brain, had, in the case related, only been pushed aside, on account of the intimate adhesion of the dura mater to the calvarium, its want of extensibility, the depth to which the knife had penetrated into the cranium, and the great resistance to its extraction.

The freedom from any after-accident from an injury of this nature is certainly remarkable, but by no means unparalleled; for, as is mentioned in the remarks on the above case, Mr. Selwin published in the *Lancet*, in 1838, the account of a case in which the blade of a knife entered the cranium, in a child four years old, through the upper part of the orbit, to the depth of about three inches and a half, wounding in its course, the optic nerve, and the levator of the upper lid. Its removal was long and troublesome, attended by some hemorrhage, and the wound giving vent to some fragments of brain. The child recovered, retaining its senses, but losing the vision of the eye which was wounded.

To this case may be added another, reported by M. Fournet, of an individual who, being desirous of destroying himself, took with his left hand a chisel, such as is used by cabinet-makers for making mortices in chairs, and having adapted it with its sharp edge to the centre of his cranium, armed his right hand with a wooden mallet, with which he drove the chisel into his skull up to the handle, this alone preventing its further penetration. In order to avoid too much movement in removing the instrument, M. Fournet made use of the proceeding adopted by Ambrose Paré to remove a portion of a blade from the cranium of the Duke of Guise. The patient was seated in a chair sufficiently low, the head being immovably fixed. M. Fournet got upon a table, and after having very tightly fixed the handle of the chisel in a vice, laid hold of the vice with his two hands, and exercised upon it a vertical, uniform, and continued traction. The instrument was thus removed, and after awhile the patient got well. In order to make himself acquainted with what part of the brain had been entered, M. Fournet drove into the cranium of a dead subject, at exactly the same point, in the same direction, and to the same depth, the very instrument which he had withdrawn from his patient. On opening the head, he found that it had traversed the inter-parietal (sagittal) suture, and the superior longitudinal sinus—had grazed by one side of the falx cerebri, between the two cerebral lobes, and had reached between the tentorium cerebelli, the posterior part of the corpus callosum, as far as the quadrigeminal tubercles, but without having at all injured them.

37. *Extensive Lacerated Wound of the Rectum and Bladder, produced by the Leg of a Chair.*—Mr. Prescott Hewett presented to the Pathological Society of London, Feb. 1, 1847, a specimen of this accident. The patient, a man, aged 43, was admitted into St. George's Hospital, under Mr. Keate, in a state of collapse, and complaining of severe pain about the vesical region, and over the lower part of the abdomen. He stated, that a short time previously, he had slipped off a table upon which he was standing, and that in his fall he had knocked over a chair, one of the legs of which having struck him on the side of the anus, had glanced off, and passed up the rectum. On examining the anal region, nothing was observed, with the exception of a slight laceration at the left margin of the anus, which did not penetrate more than a few lines in depth. A catheter was passed into the bladder, and a quantity of bloody urine drawn off. The pain soon spread over the whole of the abdomen, the collapse continued, and the patient sank, with symptoms of low peritonitis, in about twenty-one hours after his admission to the hospital. At the *post-mortem* examination no appearances of injury existed about the perineum; but there was some ecchymosis in the neighbourhood of the slight wound at the margin of the anus. At about two inches and a half from this opening, there was a large lacerated wound in the front part of the rectum, through which two fingers were easily passed into the bladder, at its fundus, and on laying open this organ another extensive laceration was found at the right side of its apex, leading into the cavity of the peritoneum. The leg of the chair having slipped up the rectum, had thus transfixed this organ and the bladder from its fundus to its apex. The peritoneum contained a large quantity of bloody fluid, mixed with recently-effused lymph.

The preparation is in the museum of St. George's Hospital.—*Lond. Med. Gaz.*, Feb. 1847.

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38. *Tetanus following a lacerated Wound of the Cornea.*—The following example of this was communicated to the Royal Medical and Chirurgical Society (May 11, 1847), by George Pollock, Esq.

J. S., aged 33, was admitted into St. George's Hospital, under Mr. Keate, on the 10th of January, 1847. He had that morning received a cut from a gig whip on the left eye, which lacerated the cornea, dividing it through its entire thickness, and extending obliquely across from one margin nearly to the other. The aqueous humour had escaped, but there was no prolapsus iridis, and but little pain or chemosis. Goulard's lotion was applied, and an antimonial and aperient saline ordered every six hours. On the following day, the lids were distended and tense, and there was great chemosis; the conjunctiva almost hiding the cornea; the pain also was great in the globe and forehead. Six leeches were ordered to the left temple, and warm fomentations. The above symptoms were still further aggravated on the following day, when several punctures were made in the upper lid, which afforded immediate relief. On the third day, the leeches were repeated, and three grains of calomel and half a grain of opium were ordered twice in the day. On the sixth day, the visible portion of the cornea was cloudy; and on the seventh, there was purulent discharge from the tense and projecting globe. On the evening of the same day, the muscles of the face on the right side appeared contracted, and the patient complained of stiffness about the jaws. On the ninth day, trismus was fully established, and the hemiplegic condition of the face had become more distinct. He had been blistered and cupped on the previous day. A puncture was made into the projecting globe, and gave exit to some foul pus. General tetanic symptoms subsequently supervened, and he died on the following morning, an ineffectual attempt having been made to affect him with the vapour of ether. On examining the body, the vessels within the cranium seemed to be congested; as were those of the mucous membrane lining the larynx and pharynx. The liver and kidneys were also gorged with blood. The globe of the affected eye was completely disorganized, its different component structures being scarcely at all distinguishable. The author considers the above case interesting from its extreme rarity, as he is unaware of any record existing of a similar lesion producing corresponding results. The apparent paralysis of the face he also regards as an interesting complication, and it was unexplained by the post mortem examination. The irritation and distress occasioned by the attempt to administer the vapour of ether, were such as to forbid perse-

verance in this endeavour to relieve the patient's frightful sufferings. In the tabular view which the author gives of ten other cases of tetanus admitted into St. George's Hospital since 1841, it appears that only two recovered. Seven of the fatal cases were traumatic, and the symptoms of the disease declared themselves within three weeks of the receipt of the injury, with one exception. In four cases, the brain was rather congested, and in one there was softening of the spinal cord. The author remarks, that no satisfactory conclusions can be drawn from the treatment of these cases, both opium and Indian hemp having proved uncertain and unsatisfactory remedies.—*Lond. Med. Gaz.*, June, 1847.

Mr. Dalrymple expressed the opinion, in the correctness of which we entirely coincide, that the tetanus, in this instance, seems referable to the violent secondary attack of inflammation of the globe, and the extension of irritation to the ciliary nerves, rather than to the primary injury of the cornea.

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39. *Treatment of Dissection-wounds.*—Dr. Hargraves recommends the following as a simple, and in his experience, efficacious plan of treating dissection-wounds. It is applicable to the fingers and the thumb, the parts most frequently liable to be wounded:—Wash them well for a few minutes in cold water, then suck them; immediately after apply a ligature a little above the cardiac side of the wound with such tightness as will induce decided congestion, which will be indicated by the colour of the parts; some blood will also flow from the injured surface, and a certain degree of numbness will follow its application. The ligature is then to be firmly tied and knotted, and allowed to remain on for at least twelve hours; I have kept it on for double that period, and still pursued my professional engagements.

The physiology of such treatment is explained by the ligature causing a permanent stasis in the fluids of the part injured on its distal side, and producing a well-marked plethora there; the greater the amount of it, the greater will be the impediment to absorption. The constriction caused by the ligature, will also oppose a barrier to the return of the venous and lymphatic fluids into the system, consequently to their being circulated through it, so that the poison is prevented entering into the constitution and destroying it, and will then be eliminated locally from the part where it was first applied; thus suffering and pain will be obviated, and life, valuable to all, will be preserved.—*Dublin Med. Press.*

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40. *New Mode of bandaging Wounds and Stumps.*—M. Baudens communicated to the French Academy of Sciences, June 6th, a method which he had lately devised, of bringing together the edges of wounds in order to unite, and which he is now daily employing with success at the hospital. For instance: in order to unite the two flaps of integument, after the operation for removing the foot at the ankle, as practised by him, a bandage is fixed circularly above the stump, and in it are inserted two strong pins, one in front, the other behind, leaving their heads and points free. Around the two ends of the pins thus left exposed, a long and thick cotton thread is looped; the threads from both sides are next brought down to the edge of the stump, and crossed over the lips of the wound, which are held together by the fingers of an assistant. The thread, being crossed over to the opposite side, is now passed under the ends of the pin of that side, from which, again, it may be made to recross: by this crossing of the threads of both sides over the wound, a support is given to it similar to that afforded by a bandage. The crossing of the threads may be repeated as often as is deemed necessary; and the course of the threads of opposite sides may be parallel, or across, so as to make a figure of eight. The ends of the ligatures applied to the arteries, being also made fast to the pins, are in no danger of being torn away in removing any applications from the stump, as will sometimes happen with the old plan.

The advantages this plan offers are—the gentle pressure exercised by the thread; the avoidance of impregnation by the discharged matter, which cannot long remain in contact with the end of the stump; the open spaces left between the threads allow of a ready discharge of fluid matters from the wound; and the constant pull upon the circular bandage above the stump tends to draw the flesh towards its extremity, and so to render it conical.

This mode of bringing about the union of parts is, according to M. Baudens,

applicable to all kinds of wounds, a suitable support being first contrived for the pins, on which the traction is exerted.

It may be remarked, however, that many surgeons object to a circular bandage being applied just above the stump, at least with any tightness, such as M. Baudens' method would require, on account of the impediment it offers to the circulation in the part, and the consequent tendency it has to produce an œdematous state, and even worse results. Nevertheless, even if the evils of constriction above a stump have not been magnified, the device of M. Baudens is very ingenious, and no doubt will prove very convenient and useful in procuring the adhesion of the opposite lips of wounds in many cases.—*Lancet*, June 26th, 1847.

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41. *Fracture of the Upper Extremity of the Humerus traversing the Bicipital Groove, and detaching the greater Tubercle.* By Robert Smith, Esq.—I was called upon to examine the body of Julia Darby, æt. 80, who had died of chronic pulmonary disease. Upon entering the room the appearances of the left shoulder-joint attracted my attention, and struck me as being different from those which attend the more common injuries of the joint. The shoulder had lost to a certain extent its natural rounded form; the acromion process, though unnaturally prominent, did not project as much as in any of the luxations of the head of the humerus. The breadth of the joint was doubled. Upon pressing beneath the acromion, I could plainly distinguish a portion of the head of the bone occupying the inner point of the glenoid cavity; it formed a tumour perceptible through the soft parts, while the remainder, and by far the larger portion of the head of the bone, lay beneath the level, and internal to the coracoid process; and between these two portions the finger sunk into a deep depression or sulcus, placed immediately below the coracoid process. The elbow could be brought into contact with the side, and there was no appreciable change in the length of the arm. Such were the external characters of the injury, and from these alone I was unable to pronounce positively as to its exact nature, but conjectured that it was some variety of luxation forwards. Upon removing the soft parts, the head of the bone presented itself, increased to nearly double its natural breadth; it lay beneath and internal to the coracoid process. The greater tubercle was completely broken off from the shaft of the humerus, and in situation corresponded to the inner part of the glenoid cavity; the fracture traversed the bicipital groove, which, in consequence of the displacement which the head of the bone had suffered, was situated exactly below the coracoid process; the glenoid cavity was changed both in form and size; it was smaller than natural, nearly flat, and broader above than below. A new shallow socket was formed for the head of the bone, upon the axillary margin of the scapula, and bony matter was deposited in the capsule, which was greatly enlarged; the cartilage had been nearly altogether removed from the head of the bone, which was covered by an ivory deposit.

What occurs in the cases under consideration is, in my opinion, simply this: a fracture, traversing the upper part of the bicipital groove, detaches the greater tubercle of the humerus, thus annulling the action upon the humerus of the supra-spinatus, infra-spinatus, and teres minor; the folds of the axilla, the subscapularis, and the anterior portion of the deltoid, then, act almost unopposed, and draw the head of the bone forcibly inwards, against the inner part of the capsular ligament, and if, at the same time, the inner border of the glenoid cavity be broken (which I suspect is by no means a rare occurrence), the head of the bone passes still farther inwards, and beneath the coracoid process, amounting, at length, to an actual displacement, which is permitted by the increased size of the joint, just as a displacement of the head of the femur will often be the consequence of a fracture of the acetabulum.—*Dublin Quarterly Journal*, Nov. 1846.

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42. *New and successful Operation for Pseudarthrosis.*—Dr. J. S. Bushnan, in a letter in the *Medical Times*, Jan. 16th, relates the three following cases, in which a new method of curing false joint, caused by ununited fracture, was employed by Prof. Dieffenbach, with success. The two first were related to him by the operator, the third he witnessed himself.

Case I. In the winter session of 1845, a woman, thirty-three years of age, presented herself at the Klinik; she had broken her thigh fifteen months previ-

ously. On examination, the fractured limb was found to be nearly three inches shorter than its fellow, and much withered or reduced in size, except at the fractured part, where there was a soft, circumscribed and considerable swelling. The limb was movable like the end of a flail, and with difficulty she dragged it after her as she moved on crutches; it was not only useless, but a positive inconvenience, causing her frequently to fall, and to stumble at every threshold; the poor woman earnestly desired its removal. There was some soft callus between the fractured bones in which they moved, as in a capsule, but no bony deposit. Dieffenbach caused the absorption of this gristly matter by rubbing the ends of the bones together, and thus setting up inflammatory action; and, this object effected, he attempted to produce bony union; not, indeed, by the usual and very uncertain routine of very close and accurate contact—removing the ends of the bones by excision, escharotics, or setons. His experience of gunshot wounds had taught him, that when foreign bodies, as bullets, are lodged in bones, a great quantity of healthy and hard callus is always poured over them; and the experiments of Duhamel and Flourens had established the fact, which it had remained for the genius of Dieffenbach to turn to account. So, *having pierced the leg with a small scalpel down to the fractured bones, with a common gimlet, he drilled holes through each end of the bone, and about half an inch from each fractured extremity. Into each of these holes he introduced a small ivory peg, the same size as the gimlet, and strongly wedged them with a few strokes of a hammer.* The limb was then extended, placed in splints, and carefully bandaged. In ten days it was apparent, from the less degree of mobility between the ends of the fractured bone, that healthy callus has been thrown out; and so the ivory pegs were removed, and the wounds allowed to heal. In three months from the date of the operation, the patient walked without crutches, and was dimissed cured.

Case II. A strong hard-working man, aged thirty-one, had a year previously broken his right humerus, at about its middle part, while employed on a railroad. No union had taken place and the limb was useless. The same treatment as in the former case was had recourse to; the bones were bored with a gimlet, small ivory pegs introduced, and at the end of ten days removed. In the course of treatment, however, Dieffenbach was not satisfied with the rapidity of the progress towards bony union; he therefore introduced smaller pegs for a few days; and so successful did the case prove, that, twelve weeks from the first introduction of the pegs, the man was in a condition to resume his employment.

Case III. I had the satisfaction of examining this patient, and witnessing the operation. He was a robust and apparently healthy man, of forty years of age, who, eighteen months previously, had met with an accident upon a railroad, by which he was much bruised and his left humerus fractured at the insertion of the deltoid. The limb was perfectly useless and much withered; the false joint was capable of being moved in all directions, giving little or no pain. The limb bore the marks of setons and issues; and indeed the man had undergone a regular routine practice, under the care of the surgeons whom he had consulted. The operation was rapidly performed, as in the preceding cases, and the limb bandaged and placed in a sort of cradle. At the end of a week there was much swelling of the limb, and pain in the fractured parts, which were not as movable as before; on the twelfth day it was still more difficult to move the parts, and on attempting to do so it appeared as if it were a very stiff joint; then the pegs were removed, and I did not again see the case. In my next letter, I doubt not, I shall be able to report most favourably of it, and ultimately to assure the medical public of its successful termination.

Let us compare these satisfactory results with the uncertain and unsuccessful practices which have hitherto, in similar cases, been resorted to. All are agreed as to the difficulty and danger and want of success in the operation recommended by Celsus, and practised in modern times, of sawing off the ends of the bones. Dr. Physick's proposal to introduce a seton between the fractured extremities, is recorded to have been oftener unsuccessful than otherwise. [This is erroneous. See the number of this Journal for Jan., 1842, p. 54, *et seq.*] Cutting down to the bones and rubbing them with caustic potass, has signally failed; and, indeed, it may be said, that hitherto amputation has been the only certain cure for pseudarthrosis. Dieffenbach's operation, on the other hand, is neither dangerous, nor

difficult, nor painful: and it may be performed with every prospect of success, by any one with sufficient anatomical knowledge to enable him to avoid the great vessels and nerves of the limbs.

43. *Vertical Dislocation of the Patella (de champ).*—[In our number for April, 1843, a case is recorded by Dr. Gazzam, of Pittsburg, in which the patella was dislocated so as to rest on its edge. A similar case was recorded by Dr. John Watson, of New York, (see this Journal for Oct. 1839, p. 252,) and another has recently occurred under the observation of M. Payen.

This species of displacement was first described by Moscati. Monteggia related some cases of it; nevertheless Manne, and Léveillé after him, doubted whether it could occur, and Boyer denied its possibility. M. Malgaigne, in an elaborate memoir, (*Gaz. Méd. de Paris*, 1836, p. 673,) relates eight cases of this accident which he has collected from different authorities.

The following are the details of a case which has recently been related by M. Payen.]

"M. D., a strong robust man, about fifty years of age, was walking on the snow on the 15th of last December, when his right foot slipped backwards, thereby giving to the body a rapid rotatory movement in the same direction. Being on the point of falling, M. D. seized the railings that were within his reach, and thus immediately arrested, for the upper part of the body, the impulsion, which expended itself on the lower extremities. The violent torsion he thus experienced, occasioned him very acute pain in the right knee.

"It is quite certain that M. D. neither fell nor struck himself, as there was no mark upon the snow, and his clothes were not soiled. Persons came to his assistance, and supported him, when he made a few steps to enter his house.

"I was immediately sent for, and on my arrival, found the leg slightly flexed upon the thigh, the knee extremely painful, and strangely deformed. The patella was placed edgeways in front of the condyles of the femur, so that its external border, from having become anterior, raised the skin; its cutaneous surface was directed inwards and *rather backwards*, and its articular surface outwards and *rather forwards*, while its internal edge rested firmly on the anterior part of the extremity of the femur, a little external to the middle line; the muscles of the thigh were powerfully contracted, the slightest movement was impossible, and every effort caused very great pain.

"The patient having been placed in bed, with the limb resting on a mattrass, I attempted to push the patella backwards by pressing the internal border from without inwards, with my thumbs, whilst with the other fingers I brought the external border from within outwards, but without success. I then flexed the thigh upon the pelvis, the leg being extended, as recommended by Valentine, and again tried, but with no better result. I then had recourse to the very rational method deduced by M. Malgaigne from his researches,* and which M. Cozet had previously successfully employed in a case of *de champ* dislocation—viz., to forced flexion of the leg. But the first attempts occasioned such violent pain, and the contraction of the muscles of the thigh was so energetic, that I considered this mode as impracticable, and that I ought to abandon it.

"Convinced, from the reasons given by M. Malgaigne, that the difficulty of reduction in this case was owing to the angle of the patella being wedged in what he calls the *subcondyloid space*, and being unable to dislodge it by flexing the limb, I imagined that I might arrive at the same result by the opposite proceeding, that is, by causing the patella to ascend. To effect this, the limb being extended on the bed, I ordered the patient to raise his leg as much as possible, my fingers being at the same time so placed as to cause the patella to turn over. The patient obeyed, and made a sudden and violent effort; the patella yielded, and became somewhat raised, and then, with the combined assistance of my fingers, immediately reduced to its proper position. The knee immediately regained its shape, and was scarcely at all painful. The patient was ordered to keep in bed. Dur-

* See his "Mémoire," p. 49, and his "Anat. Chirurg.," art. Articulations du Genou.

† "Mém. de la Société Méd. d'Emulation," t. ix., p. 517, and the "Mémoire" already quoted, p. 68.

ing the first day the articulation was surrounded with compresses dipped in cold water. On the following day a swelling made its appearance on the inside of the knee, which gave the sensation of fluctuation. There was, however, no ecchymosis. On the seventh day, the knee was restored to its ordinary size, and but little pain was felt on moving the patella from side to side. I surrounded the knee and the adjoining parts of the thigh and leg with a dextrined bandage, and the next day the patient was able to walk about on crutches.

"On the twenty-sixth day I removed the bandage, and replaced it by a laced knee-cap. The patient was ordered to keep his room for a few days longer, and six weeks after the accident, M. D. went out on foot with merely the aid of a stick. He is now quite recovered."

M. Payen makes the following remarks on this case, which are worthy of being quoted.

1st. At the time M. Malgaigne published his essay, and from the facts which he had collected, we were justified in stating that the internal *de champ* luxations were more common than the external (5 to 3). The two new cases of MM. Watson and Gazzam, however, restored the equilibrium. Now, the one above related places the majority on the other side, that is, in favour of the external dislocations (6 to 5).

2d. Of the known cases of *de champ* luxation, those produced by mere muscular contraction are much the most rare, since only two of the ten cases I have just related—one external, and the other internal—are of this description. The one I have mentioned was external; and it seems rational to admit that the greatest number of dislocations of the patella, caused by muscular action alone, ought to take place in this direction, for it is to this side that the triceps tends to draw the bone, and we know that it is on this same side that what are called spontaneous luxations are always observed.

3d. The above case fully confirms M. Malgaigne's ideas as to the cause of the difficulty of the reduction, and it is evident that the proceeding we adopted could succeed only by disengaging the angle of the patella from the subcondyloid space. As regards the mode of reduction, our case is very analogous to that of Monteggi (M. Malgaigne's sixteenth observation), in which the patella became spontaneously reduced during the efforts made by the patient in walking. In both cases the bone was dislodged from its wedged position by the same mechanism; we may, therefore, reasonably establish the precept, viz., to assist the reduction by making the patient stand up, or even by making him walk.

4th. As regards the facility of the reduction, our case holds an intermediate position between the extreme cases; and we may mention that, of the eight recorded by M. Malgaigne, the difficulty was so great in four that, in one, division of the muscles and of the ligamentum patellæ was resorted to without success; in two others, the elevation was obliged to be employed; and that in a fourth, the reduction was impossible. We may also add that in the case of Dr. Gazzam, the bone was not reduced till after the ligamentum patellæ had been divided, yet this division did not apparently facilitate the reduction.

5th. It has been said that the greater or less facility in the reduction depends on the cause of the displacement, and that the luxations of the patella produced by muscular contraction are more easy to reduce than others. May not this depend on the action of the muscles alone not being, generally speaking, sufficient, unless there is some anatomical disposition to favour the displacement; and which, consequently, facilitates the inverse route which the bone has to pass through in order to become reduced? Still I may remark, that in one case where M. Cuynat was obliged to employ the elevator, the dislocation was occasioned by muscular contraction. However, notwithstanding that, M. Malgaigne's opinion, as to the partial and spasmodic contractions of the triceps femoris being a cause of the luxation of the patella, is contested.* I, nevertheless, entirely coincide with it; indeed, it appears to me to be corroborated by the case we have related, for we cannot comprehend how there can be complete harmony of contraction in the inordinate and discordant movements above described. These isolated contractions of the muscular fibres appear to me incontestable; it is stated in all our treat-

* A. Berard, "Dict. de Méd.," vol. xxvii., p. 646.

ises on anatomy, that when the arm is raised, the anterior portion of the deltoid contributes to carry it forwards, and the posterior portion backwards; the same, in fact, with numerous other muscles. We, therefore, see no difficulty in acknowledging the preponderating contraction of one portion of the triceps femoris, as a cause of certain dislocations of the patella; and M. Malgaigne has very truly affirmed that the simultaneous action of all the muscles of a joint tends to consolidate, and not to modify, its relations.

6th. It has been stated that there may be some difficulty in ascertaining whether the *de champ* luxation is external or internal; in the above case, no doubt could possibly exist; and the patella, evidently placed outside the middle line, pointed out very clearly the direction of the displacement. I am not aware that it is the same in every case; still the examination of the surfaces of the patella ought to be an indication, as it proved to be in our patient.

7th. As to the information said to be furnished by the extensor tendon and the ligamentum patellæ—the internal border of which, being more tense, indicating an internal luxation, and *vice versa*—we have endeavoured in vain to appreciate its value; the ligamentum patellæ, when forcibly stretched, did not present any distinct or appreciable border.

8th. Lastly, in the case I have given, I have mentioned that the surfaces of the patella had become placed not merely laterally, but that the posterior was external, and *at the same time rather anterior;* and the anterior internal, and *a little posterior*. This disposition was sufficiently marked for me not to hesitate to admit the possibility of the *upside-down* luxation; and I am convinced that if M. D. had fallen on the knee after the displacement of the patella, this dislocation, in a more or less complete form, would have been produced.—*Revue Medico-Chirurgicale de Paris*, May 1847.

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44. *Partial Dislocation of the Humerus and of the Femur.*—In 1824 the surgeon-in-chief of one of the Paris hospitals presented to the Academy a pathological specimen, taken from a man who died eight months after suffering from a dislocation of the humerus, which had not been reduced. It exhibited a false joint, formed on the one hand by the glenoid cavity of the scapula, and a small portion of the surface of the ribs, and on the other by the head of the humerus, which was grooved to receive the anterior border of the glenoid cavity, the two surfaces being thus locked together, so as to constitute a sort of hinge-joint. During life the only motions which could be performed were in a direction from before backwards, and that to a limited extent. In a case of spontaneous luxation of the femur, the same surgeon found the softened head of the bone resting on the anterior border of the cotyloid cavity, and there firmly locked, as in the preceding case. These, then, are two well authenticated instances of *partial dislocation* of the two orbicular articulations, the improbable occurrence of which led all authors to deny the possibility of their existence.—*Dupuytren on Injuries and Diseases of the Bones.* Translated by Le Gros Clarke.

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45. *Treatment of Chronic Cystitis by injections of a solution of Nitrate of Silver.*—Dr. Robert L. MacDonnel, in an interesting paper in the *British American Journal of Medical and Physical Science*, (Sept. 1847,) extols, in strong terms, the efficacy of injections of nitrate of silver, in chronic inflammation of the bladder,—a disease which has proved very refractory to other remedies, and which entails on those who labour under it, the most exquisite suffering. In proof of the value of the remedy, he relates four cases, one of which is the following:

"A gentleman consulted me last February, under the following circumstances. He had suffered for some months from inflammation of the bladder, marked by frequent desire to pass water, accompanied by heat and scalding, violent straining, pain in the region of the bladder, above the pubis and in the perineum, and a constant feeling of heat and weight in the lower portion of the abdomen. These symptoms gradually increased in severity. The urine became at first bloody, and afterwards purulent, and the desire to void it became so urgent, that it had to be yielded to at least every fifteen minutes; the discharge of the fluid being followed by pain and scalding at the neck of the bladder, and along the course of the urethra. His general health became impaired; and his sleep being so frequently

disturbed, a haggard and anxious expression of countenance, and extreme irritability of the system, were soon established.

"When he first consulted me, fully one-half of the fluid passed from the bladder was pure pus; and after repose, a deposit of blood-globules was found to intervene between this and the supernatant urine—the latter being highly alkaline, fetid, and albuminous. Examined microscopically, it exhibited some scales of nucleated epithelium, a large deposit of triple phosphate in prismatic crystals, pus, and blood-globules. There was no pain in the loins or along the ureters. He had a stricture of long standing, about one inch from the orifice of the urethra. In addition to the above characters, the urine was frequently mixed with tenacious masses of lymph, varying in length from half an inch to an inch,* and entangling a quantity of earthy matter; they frequently obstructed the passage of the urine through the stricture, and required to be broken up and squeezed through by the pressure of the patient's fingers.

"Having dilated the stricture, so as to allow a large-sized catheter (No. 11, Weiss) to pass, I determined to treat the disease by injections of nitrate of silver; and accordingly, on the 17th of February, I injected into the bladder, a lotion composed of eight grains of lunar caustic, two drachms of tincture of hyoscyamus, and four ounces of distilled water.

"The injection caused hardly any inconvenience, except that of inducing a strong desire to empty the bladder, which was prevented by compressing the penis, until the fluid had been in the bladder for about one minute, when it was allowed to escape. The next day, the patient stated that he was somewhat better, but the quantity of pus and blood was not, however, much diminished, and the flakes of lymph were more numerous and larger than before. Although he continued improving, yet, as the amendment was not as rapid as I anticipated, injection of the viscus was again resorted to on the 5th of March. On this occasion, the quantity of caustic was increased to sixteen grains in the four ounces of distilled water, and the hyoscyamus was omitted. A decided improvement immediately followed; the frequency of making water was greatly diminished; instead of requiring to be voided every fifteen minutes, the bladder could retain its contents for more than two hours at a time, and the quantity of pus had greatly decreased. An injection, of the same strength, was again employed on the 28th of March, and with happy results. The urine could now be retained for three or four hours; was passed without pain or scalding; was clear and transparent, and, to the naked eye, free from pus; but, when examined microscopically, a deposit of pus-globules and some epithelial scales were perceptible. On the 18th of April, I repeated the injection, and since then he has been completely free from any symptoms of his troublesome disease; he has resumed his former mode of life and pursuits, and has been subject to various changes of temperature whilst travelling, without experiencing the least return of his former symptoms."

The method of injecting the bladder which Dr. MacDonnell has found most efficient is the following:—

"The patient being placed either in the erect position or on a sofa, a gum elastic catheter, about the size of No. 9 or 10 (Weiss), is introduced, and water at the temperature of 98° Fahr., is injected through this into the bladder, by means of a caoutchouc bag, or, what I prefer, a syringe, with a "three-way valve," by which the fluid can be drawn back from the cavity if necessary. After the bladder has been completely cleansed of any fetid urine and mucus which may be contained in it, the solution of the caustic, being heated to the same degree, is to be introduced in a similar manner, and allowed to remain there for about one minute, care being taken, by compressing the urethra, to prevent its being forcibly ejected by the violent straining that is certain to be induced. The quantity of water or solution should never exceed four ounces, for though the bladder in its healthy state is capable of containing nearly a pint and a half of urine, without being

* C'est encore dans les cas de suppuration, qu'on trouve des productions pseudo-membraneuses dont parlent les auteurs. C'est l'expulsion de ces fausses membranes par l'uréthre qui a fait répéter à tant de medicins que la tunique muqueuse de la vessie pouvait être entièrement detachée et expulsée par portions avec les urines. —Ferrus, Dict. de Méd., Art. *Cystite.*

over distended, yet as the quantity it is capable of retaining in severe chronic inflammation, seldom exceeds a few tablespoonfuls, the bladder accommodates itself to its diminished contents, and gradually becomes smaller, and consequently, a large injection would act injuriously in two ways—by over distending the organ, or by passing up into the ureters. In fact, we find it unnecessary to use a larger quantity of the solution than I have mentioned, for it requires some address to introduce even that amount without resorting to force. The patient is then ordered a warm bath, and should the urine become bloody or mixed with shreddy concretions, he should use frequent fomentations and anodynes. But these symptoms seldom last for more than a few hours, and our patient should always be informed that such consequences are likely to be the immediate effects of the operation.

"My patients have not suffered from retention of urine, which it appears frequently follows the use of the solid nitrate in the practice of Lallemand, nor have they had any inconvenience which was not readily allayed by an opiate.

"The advantages which I consider the solution of nitrate of silver possesses over that substance in a solid form are, first, that we can employ it of various strengths, from one to four grains, or even stronger if necessary. Secondly, we are certain that the application comes in contact with the entire diseased surface. Thirdly, we are also satisfied that it does not act more violently on one part than on another. Fourthly, it is more readily employed by an inexperienced operator; and, above all, it cannot possibly be attended with any risk, from the apprehension of which it is not easy to divest the mind, when using the *porte-caustique* of Lallemand, and together with the above advantages, it has this also to recommend it, that it will be found at least equally successful."

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46. *Successful Extirpation of an Ovarian Tumour.*—Dr. Woyeikoweki, of Quingey, was called to a woman who was some hours in labour—the pains were trifling, the waters had escaped, and a fleshy tumour protruded shortly after from the vagina. The patient, aged 40, had had three children within the previous three years—but while she experienced the same symptoms of pregnancy in the present instance as in the former ones, she was surprised at going three months beyond her proper time. On examination Dr. W. found the protruding tumour to be the uterus, about three times its natural size,—the *os* sufficiently open to admit the index finger; he was unable to return the parts; the abdomen was greatly distended with fluid, and was so tender to the touch as to prevent any examination of the contained organs. Paracentesis was performed with a trocar, and thirty-five *litres* of a yellowish, transparent, inodorus fluid drawn off. The hand was now enabled to detect a tumour in the abdomen the size of a man's head, round, irregular in its surface, perfectly indolent, and floating in the upper pelvis; the patient felt and moved it with her hands, and implored that it might be taken away. The uterus could now be returned without any difficulty, and the other contents of the abdomen appeared perfectly sound; the patient was kept in bed on rigidly low diet until next day, when a consultation was requested with those surgeons whom she had applied to formerly, when she found the ninth month had passed without any signs of labour coming on. The diagnosis was found very embarrassing, but gastrotomy was decided on. The patient was placed on a reclining couch; Dr. W. stood on the right side of her and an assistant on the left; an incision was made through the skin with a convex bistoury along the linea alba from three fingers' breadth above the umbilicus down to the pubis; the cellular tissue and aponeurosis were next divided in the same direction, taking care not to touch the peritoneum, which was easily avoided, there being no subcutaneous fat; a small opening was now made into the peritoneum at the highest part of the previous incision, through which the index finger of the left hand was passed and against its point the end of a button bistoury rested, with which the peritoneum was laid open the whole length of the wound in the parietes, and immediately full thirty litres more of a similar fluid to what had been discharged by the trocar previously, was received in a vessel in readiness, besides what fell on the floor. The great omentum and small intestines immediately protruded and lay on the patient's thighs. The assistant (M. Matusewicz) returned them and retained them *in situ* with a napkin spread with salve. A round tuberculated swelling was now seen, firm to the touch, floating in the superior pelvis, and attached to the right side of the uterus near its fundus by a

pedicle half an inch in diameter and three inches long. An exploring puncture was made into this tumour with the bistoury, and the sensation given to the hand was as if the knife was traversing old lard; this convinced the operator that it was a scirrhous ovary. One of the assistants raised it in his hands while a ligature was put round the pedicle close to the uterus; the end of the ligature was retained out of the wound, and the tumour was detached by a stroke of the knife. The lips of the wound were immediately brought together and retained by eight points of suture (quill) tied on pieces of diachylon plaster rolled up. The patient was then put to bed lying on her back with her legs and thighs flexed. Cloths wrung out of cold water were applied to the abdomen, and ordered to be renewed every five minutes; low diet, and a few spoonfuls of lemonade for a drink. The operation lasted eight minutes. The tumour was carefully examined; it weighed six pounds and a half, (fr.) it was smooth and irregular on its surface, and the rudiments of the Fallopian tube and its extremity were easily distinguished on it. Its structure was lardaceous, yellow, and very resisting, and some small collections of pus were found in its substance. On the 2d of May (twenty-four hours after the operation) she remained without pain or fever; the lips of the wound were a little tumefied. 3d. General state continued satisfactory; lips of the wound a little more tumid; the patient had enjoyed a quiet sleep, and begged something more nutritious to eat, which it was thought proper to refuse. 4th. A kindly suppuration was established. The ligature soon came away, the wound healed, and on the 25th day after the operation she walked home to a neighbouring town, with a swathe round her, such as is worn after confinement. About four months after this, this woman became pregnant, and at the usual period was delivered of a healthy boy; she lay in again of another boy equally thriving in December last. It would seem that the assertion made by the father of medicine, that male children were developed at the right side and females at the left, might, *en passant*, be proved to be incorrect from this case, for it was the right ovary that was extirpated in this instance.—*Dublin Med. Press*, June 30th, from *Journ. de Méd et de Chirurg.*

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47. *Vesico-vaginal Fistula.*—The *Comptes Rendus*, for the 14th of June, contains an interesting report, by MM. Roux, Velpeau and Lallemand, on a memoir of Dr. Jobert, on vesico-vaginal fistula, and on a new mode of operating, devised by himself.

The report commences by observing that the present memoir is, in some measure, a continuation of that read by the author on the treatment of some forms of urinary fistula in men, too extensive to be cured by the ordinary means. The conditions of these male urinary fistula are of the same character as the vesico-vaginal in the female; and the same principles of cure M. Jobert applies in both. Before proceeding with the description of the plan of M. Jobert, it is as well to glance at the different processes which have been employed to repair the loss of substance.

The most ancient method is that of transplantation; as where a piece of skin was removed from the forehead or arm to repair a portion of the nose. Now, in this manœuvre, the portion of integument, being quite removed from the original source of its vascular supply, is very liable to mortify, and its purpose thus fails. Dr. Jobert, in his first attempts to heal vesico-vaginal fistulas, had recourse to this plan; but he has now entirely given it up, although he employed it successfully in two cases.

An improvement in autoplastic operations was contrived by using a portion of skin from the immediate neighbourhood of the chasm it was required to fill, but leaving it attached by a pedicle, so that it still continued to receive blood from some of its original channels. This process has been called autoplasty by dissection.

When the skin is very elastic and loose, and when it has beneath it an abundance of areolar tissue, a portion of it may be drawn to one side, without so much stretching being necessary as to endanger union. This is what Dr. Jobert has done when he has made use of a part of the scrotum to repair great losses of the substance of the urethra. This variety of autoplasty (*autoplastie par glissement*) is still more advantageous than the preceding, since the skin here has not at all to be dissected off to fill up the breach, but only to be relieved from tension, so as to

contract adhesion. And it is readily seen how the resulting integrity of the subcutaneous areolar tissue favors the vitality of the portion of skin.

It is true that all the tissues have not, like the scrotum, numerous folds easy to unfold in any direction; but those which have beneath an abundant cellular tissue will still admit of being considerably displaced, when, at some distance from the margins of the loss of substance to be repaired, a sufficiently long incision is made in the direction of its great diameter. Then the parts being brought together by suture, and stretching tells especially on this incision previously made. This last method is more strictly one of sliding (*glissement*) than the preceding. It is now necessary to examine what are the difficulties to be overcome in the healing of vesico-vaginal fistula.

The first obstacle presenting itself is the constant contact of the urine with the inner orifice. In urethral fistula, the urine is only discharged at intervals, and is under the control of the will; but in a fistula opening into the bladder itself, the urine will continually dribble through it. And from the slight thickness of the septum between the bladder and vagina, the fistula cannot be long, oblique, or sinuous, but the urine immediately passes into the vagina: and it also follows, that when we wish to unite the margins, they cannot be brought into contact but to a little extent. Lastly, the partition between the bladder and vagina being between two cavities, is loose, and has no firm support on each side, and the borders brought into apposition may easily be drawn to one or the other side; and, moreover, the surfaces adapted for union may be in actual contact only by the mucous membrane of the bladder, or by that of the vagina, and we know that mucous membranes cannot contract adhesions. These things being granted, we shall comprehend what takes place in the different kinds of vesico-vaginal fistula, according to their extent, their date, &c.

At the termination of a difficult delivery, for example, if the fissure be very narrow, and the inflammation of the surrounding parts be sufficiently intense, as by their swelling to bring the margins into contact, a spontaneous cure may happen. But this happy termination is exceedingly rare, because it is difficult to maintain the margins sufficiently long, and intimately in contact, for a distended bladder may at once destroy the work of cicatrization.

When inflammation subsides before cicatrization is complete, the urine will escape through the accidental opening left. If, then, a more free escape for the urine be provided by a catheter than that presented by the fistular orifice, the obstacle to complete union is removed; but that it may be so, the orifice must be almost capillary. After a time, cauterization may be used to a small orifice with callous edges, to cause inflammation, and consequent union. But every time cauterization is employed, a portion of substance is destroyed, more in proportion as the cautery is more potent; also, the chance of producing union decreases every time the cautery is employed afresh.

When vesico-vaginal fistulæ are not so narrow that inflammation may bring their borders into contact, some artificial proceeding must be adopted to do so, and to maintain the apposition during the time necessary for cicatrization; these cases are by far the more numerous. Provided the opening be not too extensive, it is possible to maintain its borders in apposition, without too great a stretching of the neighbouring tissues, and union may take place before the sutures tear through the flesh, since five or six days suffice for the organization of a cicatrice between surfaces fitted for it.

But the vesico-vaginal septum may suffer from still greater losses of substance, and the opening deserves no longer the name of a fistula, as it may be so wide as to allow the bladder to be inverted into the vagina: here, then, the ordinary means of union are inefficient. When even the suture may be able to draw the opposite margins into contact, so much dragging is caused, that soon the overstretched tissue tears, and the sutures lose their hold to a greater or less extent, and thus the opening is re-formed, the urine can still escape, and the contact is not so close as to permit the occurrence of adhesion. Hence, such severe cases have been regarded as beyond the resources of art, for no method of which surgeons were cognizant sufficed for their cure; they were obliged to have recourse to mechanical expedients to render the patient's misery less.

M. Jobert would not give such cases up in despair, but applied himself to the

invention of a method of operating, the application of which it seems difficult to limit, since by it he has repaired nearly the entire vesico-vaginal septum, which had been destroyed by gangrene, in the course of a laborious confinement.

After having successfully employed *autoplastie par glissement* to close up wide urethral fistulæ situated in front of the scrotum, M. Jobert thought he might apply the same plan to considerable losses of substance of the vesico-vaginal partition, and he used it in cases where the second mode of autoplastic operating—that where the flap is dissected up, but left attached by a pedicle—had completely failed. The following are some of the anatomical grounds on which this new idea was founded:—

The vesico-vaginal septum consists of two distinct walls, applied to each other, but not confounded, the free or mucous surfaces of which enter into the construction of organs of different functions. The wall of the bladder is separated from that of the vagina by an abundant and elastic cellular tissue, allowing of the distension of one of the cavities independent of the other, and of the displacement of one without the other It is, then, possible to cut the wall of the vagina without interfering with the mucous membrane of the bladder, or with its muscular layer outside. Now this wall of the bladder is alone necessary to the repair of the viscus; we can then, in cases of considerable destruction of the double septum, do away with the tension of the parietes of the vagina after the union of the edges of the fistula, by cutting through this wall only, outside the points of suture. The dragging produced by too great tension is thus rendered naught, the rapid tearing of the flesh by the threads is consequently prevented, as also the separation of the margins. Thus, for example, the vesico-vaginal septum being destroyed, from the neck of the bladder nearly to its fundus, the borders of this enormous fissure may be brought together, and placed in contact, from before backwards, by employing sutures; then, if a transverse incision be made in the wall of the vagina, between the threads and the neck of the womb, without penetrating to the muscular parietes of the bladder, the uterus may regain its position by the divarication of the lips of the incision, and the cellular coat of the bladder alone is exposed, at the upper end of the vagina. In this way the remnants of the vesico-vaginal septum, preserving their entire thickness, and being in contact, may be maintained for a long time in apposition, and without suffering from dragging, although the margins have not been previously shaved. On the other hand, the posterior wall of the bladder being drawn downwards and forwards, becomes the inferior wall, and serves to close the opening into the bladder. If the bladder thus completed is rendered smaller, it is made up of the same layers—viz., mucous membrane and muscular fibres. The evacuation of urine may be rendered more frequent, but still it is subject to the will.

The preceding is not merely hypothetical, but the result of observations; and M. Jobert had a patient, whose vesico-vaginal septum was destroyed, as above supposed, by gangrene, which also had extended to the urethra; and yet the new neck of the bladder, though formed of only remnants, allowed the urine to be retained for three hours, under all the ordinary movements of the body, and was under the control of the will.

If the fistula be elongated, and occupy the median line, a double incision may be made from behind forwards, between the line of the sutures and the lateral walls of the vagina, in order to avoid the evils of any transverse draggings. If the fistula be on the right or on the left side, the incision should be made in the corresponding vaginal wall, which alone would be stretched. Then the line of suture along with the wound, would be drawn towards the median line. In a word, incisions ought to be made in the vaginal walls at all the tense parts which appear affected by dragging. Such is the plan of Dr. Jobert, which has the further advantage of being without danger. The author has found it to succeed in six out of eight cases.

As to the operation, it is less difficult than appears at first sight. Some time back, Lisfranc showed that the neck of the womb might, without inconvenience, and with ease, be drawn down to the opening of the vulva, by seizing it on each side. Now, the uterus, in descending, draws with it the vesico-vaginal partition; it is then sufficient for an assistant to retain it in its depressed position, whilst the posterior wall of the vagina is pressed down towards the rectum, in order to give

the operator the opportunity of bringing together the borders of the fistula almost as easily as he could external parts. The threads of the suture are then passed through by an instrument. Before letting go the neck of the womb, to allow it to re-ascend, any tension or dragging must be done away with by incision. The ends of the sutures are cut off on a level with the vulva. A piece of amadon is introduced into the vagina, to absorb the blood, and a catheter placed in the bladder, to give free vent to the urine.

The reporters conclude by remarking that this plan allows us to hope for the cure of vesico-vaginal fistula, which would be pronounced incurable by any other means. The size of the opening is no longer to be regarded as an insurmountable obstacle; nor is its deep situation, its longitudinal or oblique direction, or its irregular form.

The preceding abstract of the report on M. Jobert's memoir is rather long, but we thought its subject of so high importance, as to give it so far in full. Any improvement of our modes of relieving those formidable and most miserable ruptures and destructions of the substance of the septum between the bladder and vagina, and of the perineum, to which women are exposed in difficult childbirth, must be received as a great boon. We cannot here help noticing the likeness in principle between the plan of M. Jobert for the cure of vaginal fistulæ, and that practised by Mr. Fergusson for cleft palate.—*Lancet*, Aug. 7th, 1847.

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48. *New Method of Treatment for Prolapsus Ani.* By T. G. Hake, M. D., (*London Medical Gazette*, Feb. 1847.)—This method consists in returning the bowel or hemorrhoidal tumours with great care after the daily motion; in assisting its return by means of soap-lather; in applying a coil of moist sponge firmly upon the anus, and, while retaining it there with one hand, to bring the nates together by means of a broad strip of adhesive plaster, as in approximating the edges of a wound.

This method Dr. Hake has tried in several cases, and it has never failed of success. It was first suggested by a patient whose experience is embodied in the annexed letter.

"The account I promised you is as follows:—More than seven years ago, after very severe discipline, which I suppose was necessary to treat an illness that lasted many weeks, I began to be troubled with a prolapsus ani to a distressing extent. I had suffered from symptoms of it occasionally—slight symptoms, I mean, hardly worth mentioning—at times during several years before, but I took no notice of them, not knowing, indeed, what they indicated; and from time to time they came and disappeared. But in 1839, after the illness I have alluded to, there was a prolapsus every day after breakfast, and I mentioned it to a surgeon, who gave me a wash for it, but it did no good, and he did not warn me sufficiently against what it might come to. The consequence was that it went on, and did come to so much as to make my life very miserable. It generally cost me much time and trouble to restore the part to its place, and when it had been restored, there was no certainty how long it would stay there; in addition to this, there were irritation and bleeding, and running of a yellowish sort of lymph, as often as the evil returned, so that all standing, walking, and riding, were sure to lead to great suffering, and the prolapsus at times was very large. I could not find that I derived any considerable, and certainly no lasting benefit, from any treatment I was under; and though, by Mr. Copland's advice, I made use of the belts and bandages that are advised in such cases, they brought me, upon the whole, nearly as much annoyance as they relieved. This made me determine to go to work for myself, and, with more thought, and a longer time, perhaps, than you would suppose, I came at last to the following very simple contrivance, for which I can never be thankful enough when I say it has answered perfectly from the beginning, and has given me such entire comfort, with the power to do what I like without pain or inconvenience, as I never expected to have again. My contrivance is this. Take a piece of sponge four or five inches long, an inch and a half wide, and half an inch thick, the more elastic a bit you can find the better; roll this, in a damp but not wet state, pretty tightly, so that the roll, if relaxed, would be ready to spring back into its full length, and it will then make a roll of some little substance round, but still soft, and its length, when thus rolled, will of course be an inch and a half. Apply it then lengthwise to the anus, so that it may be pressed, about the

centre of it, quite home and firmly to that part. Taking care that it may remain so, stretch a length of adhesive plaster, about 14 inches long, and 3½ wide, more or less, straight across the nates, rather low down, and contrive so that while the plaster adheres on one side, you press the other side closer to its opposite before you fix the length finally where it is to remain. Then sit down, at first gently upon it, and it will become very firm and fast as long as the plaster is good. I need not say that these two pressures constantly going on do the work capitally, and without any inconvenience worth speaking of—I mean the two pressures of the roll of sponge always striving to unwrap itself, and the cross-band of adhesive plaster always keeping it from doing so by holding the nates sufficiently close together to hinder it. The working is really perfect when a little use and management have got a person into the way of it. But to facilitate matters I will set down a few observations, at the risk of being tedious and more particular than I need be.

"I never put this on until that time of day when I am going to be standing about, or to take exercise, whether walking, riding, or driving; but it should be put on then for all of these. In the evening, I take off the plaster, but leave the sponge in its place, where it has got by that time so firmly fixed by gradual spreading and swelling, that there is no danger that anything short of a great exertion will loosen it, and it is, of course, more comfortable to do without the plaster when it is not wanted. The sponge should be washed in cold water every time it is taken off, and in cold weather the plaster should just cross the fire before it is put on; in moderately warm weather it will adhere of itself, especially if it is sat upon for half a minute. The same plaster is better the second day than even the first, and will do very well the third day; this where economy is an object.

"Wash the parts where the plaster goes every morning, or oftener, with cold water, or water and vinegar; wash them well, and the skin will never suffer.

"If the plaster leaves something sticky behind it, when it is taken off, rub it with a very little spirit of wine, and the towel will remove it.

"If there be an irritation about the anus, or gut that comes down, wash it with vinegar and water, and the relief will be wonderful, and that part of the evil soon cured. This wash cannot be too much praised for this purpose, for piles, and for the like. I leave it for you to say whether something might not be dropped upon the sponge, or the sponge dipped in something which would promote a complete cure. What I have said is perfectly cleanly, secures exercise and comfort, and very gradually, I believe, tends to set things right again."

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49. *Cold Water in cases of severe Burns.* By Dr. Kusten.—A case of very extensive burning, treated most successfully by the prolonged application of cold water, has been recorded by Dr. Küsten, the particulars of which seem to indicate the great advantage which may probably be derived from this mode of treatment in most cases of severe burns. Dr. Küsten was first led to set a high value on the use of cold water in such cases, by observing the good effects which resulted from it, in the case of his own child, nine months old, which was severely scalded about the neck, chest, and abdomen, by the upsetting of a tea-kettle containing boiling water. The application of cold water was commenced immediately after the child's dress was removed: very abundant vesicative power had already taken place in the form of numerous large and small blisters. For six hours, without intermission, the application of cold wet cloths was continued: the cloths being replaced by others as quickly as they became warm. At the end of this time, the smaller vesicles had quite disappeared, and the places occupied by the larger ones were indicated by more or less intensely reddened spots. The child meanwhile had fallen asleep, and it slept soundly the whole night, (the accident having occurred about six o'clock in the evening). On the following morning the only trace of the burn consisted of a dry shrivelled appearance of the cuticle on one small spot; and this peeled off in a day or two.

The case, however, in which the beneficial effects of this mode of treatment were especially illustrated, occurred in a brandy distiller, who, in consequence of the bursting of the still, was extensively scalded over the body by the boiling and blazing spirit. The man's head, at the time of the accident, was fortunately covered by a thick cloth cap, and escaped injury; but the upper part of the body, being defended only by a shirt, suffered severely. When seen by Dr. Küsten,

about an hour after the accident, the patient was almost unconscious: he lay moaning, and constantly ejaculating "Fire!" After washing off, by means of a watering-pot, the layers of scraped potatoes which had been spread over the burned surface, it was found that over the whole body, down to the lower part of the thighs, there was scarcely a spot which was not more or less injured. The slightest degree of injury was manifested by vesication; but over the neck, chest, arms, and abdomen, the skin in places was quite destroyed. Dr. Küsten immediately covered the entire burnt surface with linen; and for an hour this was kept constantly cold and wet, by pouring cold water over it from a watering-pot. After pausing for five or six minutes, the application of cold water was renewed, and continued for another hour, at the end of which time the man had recovered from his state of partial unconsciousness. He was then left, with directions that the application of the cold water should be continued as before. When seen about six hours afterwards, the patient was in a promising condition: his face was slightly flushed; eyes open; pulse 100. He complains of a sense of general burning, which was relieved by drinking, and by the repeated application of cold water to the burnt surface. This application was continued until the patient complained of being cold. On examining the injured part the following day, the places which were previously occupied by the vesications, were indicated only by intense redness; the other part had much the same appearance as before: portions of the destroyed skin came off on removing the dressing. The injured parts were then dressed with cloths dipped in vinegar, and kept constantly wet by sprinkling cold water on them. The patient had some sleep during the night, and on the following day the reddened portions of skin had resumed almost their natural colour: commencing granulations were observed along the margins, and within the spaces of the surfaces, where the skin had been destroyed. The pulse was 90, the thirst less intense, and the tongue less dry than on the preceding day. For nine more days the same treatment was continued, and with the happiest results, for at the end of this time the wounds were almost healed.

In the treatment of such severe wounds by this mode, the dressing must, of course, be changed at least once in the twenty-four hours.

Dr. Küsten mentions one or two other instances, in which the healing of burns, of various degrees of severity, was effected most rapidly and satisfactorily by this continued application of cold water.—*Lond. Med. Gaz.*, July, from *Caspar's Wöchenschrift*, May 1, 1847.

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50. *Treatment of Burns with Treacle.*—Mr. Bulley has introduced to the notice of the profession, molasses as a dressing for burns. The plan he recommends is to steep cloths in a mixture of one part treacle to two of water, and apply them over the burnt surface. He attributes the beneficial results of this mode of treatment to the prevention of those metastases of inflammation to internal organs which were so liable to take place after severe burns. It should be applied warm, (at a temperature of 98°.) He attributes its remedial power to fermentation which takes place in the treacle. He had found that anything producing cold renders the liability to metastasis greater.—*Provincial Med. and Surg. Journal*, Aug. 25, 1847.

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51. *Treatment of Erysipelas by Linear Blisters.*—M. Piorry affirms that he has discovered a means of limiting the inflammatory action of erysipelas. This means consists in applying narrow blisters around the entire circumference of the inflamed skin, at a distance of an inch or two from its border. Unfortunately for M. Piorry's fame, this same discovery was made long ago, by the late Professor Physick, of Philadelphia; but, unhappily for humanity, it does not always succeed.

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52. *Hypertrophy of the Septum Nasi successfully treated.* By M. Brulet, of Dijon.—This affection is so rare that it has not been mentioned by authors, and both its diagnosis and treatment have to be determined.

"A boy, 10 years old, was brought to me," the author remarks, "to be relieved of a tumour seated in the nasal fossæ, which were obliterated by it. The tumour was as hard as bone, and seated immediately at the external orifice of these cavi-

ties; it was manifestly developed in the cartilaginous septum, forming a plug like a hard ball, of the size of a small nut. Regarding it as an hypertrophy of the cartilage, I believed that it might be removed. I proceeded in the following manner: I separated the inferior part of the septum, even unto its junction to the upper lip; a cut with scissors was sufficient for this. I then cut away with a tenotome all the hypertrophied part; with one point of suture reunion was immediately effected, and it was impossible to perceive where the operation had been performed to relieve the child of this singular obtrusion."

We have but once met with an analogous case. A child of 10 years old was believed to have a polypus. The right nostril was half obstructed by a reddish, hard, rounded projection, which manifestly projected from the cartilaginous septum, and yet it was not a simple obliquity, since, in the left nostril, the septum maintained its normal direction. As the obstruction was not complete, and the mucous membrane appeared a little swelled, we contented ourselves with prescribing slight cauterization, with nitrate of silver, and have not seen the child since.

The "Annales de la Société de Médecine d'Anvers," for January, 1847, contains a case, if not identical, at least analogous to that of M. Brulet. It is described as follows.

Obliquity and considerably increased length of the cartilages of the septum nasi; resection of a part of the cartilage; disappearance of the deformity. By M. HEYLEN.—J. C., aged 21 years, had from youth a very disagreeable deformity, consisting in a deviation to the right of the inferior part of the cartilage of the septum nasi, and a too great length of this cartilage, which formed a tumour in the right nostril, projecting from a line beneath the sub-septum, without any change in the relation of this to the other parts of the nose. Besides the deformity, pain was produced by the motions of the mouth. For a long time we hoped to rectify the cartilage by dilatation; but its length prevented success. We then proposed to resect the projecting portion of the septum. An incision made on the right side of the cartilage allowed the mucous membrane covering the projecting part to be dissected from both sides, and the projection to be separated with scissors. The resection of the cartilage was easily effected, but the tenuity of the mucous membrane opposed the reunion of the edges of the wound, and we had to introduce the end of a small sound, protected with agglutinative bandages, into the right nostril, to keep the septum in place during the cicatrization.

Three days after the operation no inflammation had occurred; the septum was in a greatly improved position, and its obliquity was no longer perceptible externally. In nine days cicatrization was complete, and the deformity had quite disappeared.

The fear of making a cicatrix under the septum of the nose, and thereby increasing the obliquity, induced us to choose this mode of operating. Still we think there would be no risk in making an incision of the septum laterally, in dissecting the cartilage from both sides, separating the parts, and then uniting the wound, to obtain cicatrization by the first intention.—*Ranking's Abstract*, vol. v., from *Rev. Méd. Chirurg. de Paris*, Feb. 1847.

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53. *Sublingual Tumour.—Salivary Calculus.—Dilatation of Wharton's Duct.*—As cases of salivary calculi, especially in Wharton's duct, are very rare, we record the following case briefly, as contained in the *Gazette des Hôpitaux*:—It occurred in the practice of M. ROBERT, at the Hospital Beaujon, in a man who had suffered nearly eight years from an enlargement of the sub-maxillary gland and a sublingual tumour. The tumour, small at first, had gone on gradually increasing up to the time of his admission into the hospital, when it had attained such a magnitude as considerably to impede the movements of the tongue, and to interfere with the speech and deglutition. M. Robert made an incision over Wharton's duct, when there issued a large quantity of viscous and transparent saliva, together with a calculous concretion, of the volume and form of a pistachio nut. The duct was enormously dilated, having the calibre of a large goose-quill. After the incision had been made, the tumour shrunk and disappeared, showing that it was chiefly dependent on the arrest of the flow of saliva, and not solely on the presence of the calculus. The orifice of the canal was not completely closed; and

hence it was that the patient had been enabled to postpone an operation so long a time.

The reporter of this case in the *Gazette*, states that a case, given by Sabatier, is the first of the kind on record, and that, since his time, three cases have been collected and published by Dr. Dourlens, of Lille, in 1837. The first of these three cases was mistaken by a surgeon for an abscess, depending on alveolar caries, and a canine and two molar teeth were extracted. But the tumour went on increasing, and M. Dourlens detected a salivary calculus in Wharton's duct, which he extracted after some trouble, on account of adhesions which had been formed. It was of the size of a garden bean, and weighed ten grains. The second case was that of a woman, aged twenty-seven, who had suffered seven years from acute pain in the left side of the lower jaw, radiating thence to the neck and ear. For some months the speech and swallowing had been affected, and the saliva pressed out was thick and purulent. As in the former case, a hard movable tumour, and of large size, was detected. The calculus was cut down upon, and removed, its many adhesions having been destroyed. It was of the size and form of an almond, and weighed fifteen grains. The third case was similar to that reported above. The calculus was for some time but a matter of inconvenience, but by-and-by set up active inflammation, accompanied with a purulent discharge in the mouth, and succeeded by a chronic inflammatory state, lasting for two years, and giving rise to the formation of pus. The calculus could easily be felt beneath the buccal mucous membrane, and appeared of the size of a haricot bean. The Whartonian duct was greatly dilated. As the concretion was only a source of inconvenience, M. Dujardin did not risk an operation.—*Lancet*, June 12th, 1847.

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54. *Tracheotomy in Croup*—M. Guersant communicated to the *Société de Médecine Pratique*, (Jan. 7, 1847,) an account of an operation for tracheotomy, performed on a child 14 years of age, who had been labouring under croup for four or five days, and who was commencing to become asphyxiated. The patient recovered. M. G. stated that this was the fifth successful case out of forty-one, in which he had performed the operation for true croup.—*Gazette des Hôpitaux*, 23 Feb. 1847.

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55. *Ascites cured by the Iodine Injection into the Peritoneal Cavity.*—M. Leriche of Lyons, reports, in the *Journ. de Méd. de Lyons*, the following case:—

A girl, aged 17, of weak constitution, has regularly menstruated since the age of 14, and became affected in the month of January, 1846, with ascites, after a slight pulmonary affection. Diuretics and drastic medicines had been unsuccessfully resorted to. The circumference of the abdomen measured one mètre seven centimètres (three feet eight inches). On the 11th of March paracentesis was performed, and eleven quarts of fluid withdrawn. The following solution of iodine was injected immediately afterwards into the peritoneum: ℞.—Tinct. iod. ℥j; potassæ hydriod. ʒj; aquæ fontanæ ℥viij. Four ounces only of this solution returned after injection; the remainder was abandoned in the abdomen. The following night the patient complained of some slight pains and borborygmi. The urine was increased in abundance, and on the third day considerable flatulency was observed. Up to March 21, the nights were sleepless, the urine clear and abundant, and great weakness was present; but the strength and appetite returned from that day forward, the abdomen continuing to decrease in size, and a complete cure was finally obtained on March 30.—*Med. Times*, May 29th, 1847.

[May not this have been a case of encysted, or of extra-peritoneal dropsy?]

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56. *Purulent Infection.*—M. Sedillot believes that authors have too generally regarded this affection as constantly fatal in consequence of their only taking into consideration extreme cases. He establishes a distinction between *purulent affection* and *metastatic abscesses*. As long as the disease is confined to the former condition, it may be cured; if there are abscesses only of small size, or few in number, all hope is not extinct; death only being inevitable when these are very numerous or large, or open into the pleura, the articulations, &c. The effects vary much, also, not only according to the quantity of pus mingled with the blood,

but also according to its qualities—the pus from a phlegmon producing much less deleterious effect than a sanious pus. Wounds of the perineum, in which there is a mixture of pus and urine, produce, even when the suppuration is not very abundant, fatal effects in a very brief space of time. It may be replied to the statement that the less advanced cases of purulent affection recover, that such were not examples of the disease at all; but M. Sedillot believes the pathological changes induced in man and animals from this cause are the same, and numerous experiments upon these last have proved to him—1. That a small quantity of pus injected into the veins only produces slight effects. 2. If the injection be repeated for several successive days, thirst, shivering, &c., are produced; but the animal continues to live if they are then discontinued—so that we must kill it in order to observe the pathological alterations at this period, such as patches in the lungs, emphysema, &c. 3. If a new portion of pus be daily injected, death takes place, always producing the same changes.

The lungs are the organs in which pus is found to be most frequently deposited in this affection; then follow the pleuræ, the joints, the liver, and the muscles. Although veins are constantly found leading from the source of pus, in a great number of cases no trace of *phlebitis* is visible. After amputations, in deep-seated phlegmons, in chronic suppuration, caries, &c., it is always by means of the divided or eroded veins that a direct communication between the purulent centre and the circulation is established, and the mixture of pus with blood which this gives rise to is one of the best ascertained phenomena of the disease. The constant obliteration of the veins by coagula, even in the cases in which they are inflamed, is contrary to the statement of most authors, an exceptional occurrence. The coagulum, when it exists, does not adhere to the walls of the vein, but floats in the pus, having an elongated, fusiform, shape. If it is interrupted from place to place, the blood remains fluid in the intervals, having lost its red colour, and become converted into a sanies by admixture with pus.

Recognizing different stages of this affection, and its curability in some of these, M. Sedillot enumerates the following indications of treatment. 1. Combating the inflammatory symptoms, if intense, by bleeding, especially local. 2. Modifying the surface secreting the pus, in the case of a wound. This is to be done by stimulant lotions or baths, or injections of aromatic wine. In this way the vitality of the tissues becomes modified, and the pus changed in qualities, or its secretion arrested. 3. Furnishing ample exit for pus by prompt incisions if necessary. 4. The frequent renewal of dressings. 5. The use of the actual cautery. This is often very efficacious. 6. If purulent infection seems threatened after attempting union by the first intention, the commencing cicatrix is to be broken, and the edges of the solution of continuity irritated. 7. A revulsive action of the secretory organs is to be maintained, especially by the use of purgatives. 8. Cold fluids should be drank in abundance, to maintain the venous system in a state of repletion, and diminish its absorbing powers as much as possible. 9. Counter-irritants should be applied in the vicinity of any organs suffering from derangement of function. 10. Tonics are not indicated until the febrile action has declined, and true prostration set in. 11. In the case of symptoms of infection occurring in a carious limb, amputation offers the best resource if its performance be not too long delayed.—*Med. Chirurg. Rev.*, July 1847, from *Recueil de Mém. de Méd., de Chirurg., et de Pharm. Militaires*, vol. lxii.

OPHTHALMOLOGY.

57. *Treatment of Scrofulous Inflammation of the Eye.*—Prof. Jacob, of Dublin, is publishing in the *Dublin Medical Press*, a series of extremely interesting papers on diseases of the eye. In one of these we find the following judicious remarks on the treatment of scrofulous ophthalmia.

"In providing for the treatment of an attack of inflammation of the eyeball in a truly scrofulous subject, the practitioner has to consider carefully, the probable effect of the remedies he usually employs in ordinary cases, when applied to this form of disease. When alluding to the treatment of simple, uncomplicated, or

idiopathic inflammation of the eyeball, I suggested the necessity of reconsidering the opinions generally entertained respecting the beneficial influence of depletion; in treating of inflammation modified by a scrofulous diathesis, or even by that languid or defective condition of the nutritive functions which is often assumed to be scrofulous, or perhaps equivalent to it, I have here to suggest a similar or even a greater degree of caution. A patient presenting all the constitutional marks of scrofula, but otherwise in vigorous health, may be, and often is, benefited by local or even sometimes by general bleeding, but such a subject may also suffer from it, if it has not the effect of arresting the inflammatory action. The sudden abstraction of blood, by weakening the heart's action and diminishing the activity of the capillary circulation, will often cause local inflammation to abate or even to cease altogether; but if it has not this effect, it often contributes to produce that state of the system which leads to the effusion or deposition of serum, pus, or lymph, or even of the peculiar material called tubercular; and more frequently in scrofulous than healthy subjects. In such subjects, also, bleeding appears to have less effect in causing the inflammation to abate or cease than in those not so affected, and this is, I think, especially to be observed when bleeding is resorted to after the inflammation has existed for some time, and has been thoroughly established. Bleeding should, therefore, if resorted to at all in this form of inflammation of the eye, be resorted to at the earliest period, and with the view of suddenly weakening the heart's action, and thereby diminishing the activity of the capillaries, rather than for the purpose of suspending nutrition, or interrupting the salutary and ordinary functions of the circulating organs. The local abstraction of blood by leeches or cupping, be its effect on the disease what it may, probably exercises less prejudicial influence on the constitution than general bleeding, and may, therefore, be adopted with less risk of bad consequences; but in neither form is this resource, according to my experience, to be relied on to arrest inflammation in scrofulous as in healthy constitutions.

"The practice so generally pursued of suspending the processes of growth and nutrition, by denial of the usual quantity of food of proper quality, to arrest inflammatory action, also requires reconsideration when it comes to be applied in scrofulous subjects more particularly. It should be recollected, that persons cannot continue to live without a renewal of the blood circulating in their vessels; and it is obvious that such renewal can be effected only by the administration of food capable of affording such blood. A sufficient supply of the ingredients necessary to sustain life, is also required to maintain a healthy state of the system, and without such healthy state of the system, inflammatory action cannot be controlled or prevented from proceeding to the extent of effecting destructive changes of organization. Acting on these principles, the practitioner should not, in scrofulous subjects at least, interdict for any length of time, the use of nutritious food in sufficient quantity to supply the incessant expenditure of its elements by secretion and excretion. I do not mean to say that either in quantity or quality the diet should be as generous as in a state of health, but the sudden and total discontinuance of animal and vegetable materials necessary to sustain life or preserve health, and the substitution of those incapable of doing so, such as are commonly called slops, should not be permitted. The peculiar character of inflammation in scrofulous subjects, is its not yielding in a short time, or in a distinct way, either spontaneously or to remedies, but rather gradually diminishing in intensity, or becoming less active; in other words, not terminating so often in what is called resolution, but becoming chronic: we should, therefore, be prepared to encounter a protracted state of disease, and to provide for its consequences by sustaining the strength and health of the patient. With this view, animal food should not be interdicted, as it generally is, from a prevalent belief that it induces a predisposition to inflammation, or when it takes place exasperates it. Animal food should not be given, especially at the commencement, in such quantity as to risk even a temporary increase in the quantity of the circulating fluids, and thereby to induce increased action of the heart, and corresponding activity of the capillary currents; in other words, the patient should not be allowed to make what is called a hearty meal, but he should have as much nutritious food as will secure the supply of the necessary quantity of blood of good quality to his system. Sudden and extensive change of diet should be avoided for another reason. The stomach and alimentary canal

may have their ordinary functions disturbed or interrupted by the discontinuance of the usual digestible food, and the substitution of new and less agreeable aliments, and experience has fully proved that nothing contributes more to the destructive progress of inflammatory action than such disturbance. This, however, is a subject upon which I cannot venture to enlarge here, because it involves the whole question of diet and nutrition in relation to scrofulous disease generally; but I am induced to dwell so far upon it, because I so often see the evil effects of undue depletion and defective nutrition in scrofulous inflammation of the eye, and observe so frequently the reliance placed on medicinal remedies in its treatment, regardless of this most important means of arresting its progress, and rendering its consequences less destructive. It should be understood, that these observations are applicable to the treatment of all forms of inflammation of the eyeball, although I have reserved them for the present occasion, because it is in the scrofulous form of disease, the necessity of attention to the digestive absorbent and nutritive functions becomes more urgent.

"The practitioner should not confine his attention to diet alone, in providing for the improvement of his patient's constitution by means not merely medicinal. Respiration of pure air frequently changed, the maintenance of the necessary amount of animal heat, and exposure to sufficient light, should not be neglected or forgotten. It is not only in the close, crowded, and uncleanly dwellings of the poor, that attention to respiration of pure air is demanded; the sleeping-rooms and nurseries of affluent persons frequently require as much care, badly constructed as they generally are, for the attainment of this object, and encumbered, as we frequently find them, with window and bed curtains, carpets, and unnecessary furniture. A volume might be written on the ventilation of sleeping apartments, and on the contrivances which might be adopted to correct the defects of construction in our houses which render a free circulation of pure air impossible, the measures to be pursued with the same view in the crowded rooms of the poor in large towns, or their cottages in the country, would require an equal amount of space for their suggestion. I can, therefore, do no more here than direct the attention of the practitioner to the subject, and leave it to his judgment and opportunities to apply a remedy. The maintenance of a salutary amount of heat in the system, especially in young persons, requires attention, also, difficult as it often is, to secure it, in consequence of the direction of the currents of air flowing from the doors and windows to the fireplace. A temporary screen with the necessary clothing and bed-covering, and in winter, a fire of sufficient strength, will enable the attendants to effect this object. The exclusion of light, or immuring the patient in total darkness, is generally considered an essential part of the treatment in all inflammations of the eye, yet I am convinced that the practice is founded on erroneous views. It appears to be assumed that light must necessarily cause pain, and consequently irritation, if admitted into an inflamed eye, but this is a mistake. Light, it is true, often does produce this effect, especially in the advanced stage of disease, and in peculiar forms of it, but as often do we find no inconvenience experienced by its presence. I therefore do not exclude light by closing the shutters or drawing the curtains, but merely as a precaution let down the sun-blind, or I direct the patient to sit with the back to the window or candle, as long as no complaint is made of pain from exposure; being convinced that in the majority of cases, distressing intolerance of light is induced by rendering the eye more sensitive to it by the use of shades and curtains. These observations respecting diet and general management, are more applicable to what is called the after-treatment, than to the first attempts to arrest inflammation, but I have made them here because I so often see the evil consequences of a disregard of such means followed by the worst consequences. The rule from the very commencement should be to avoid, as much as possible, making the patient an invalid, and in all cases where the practitioner can venture to do so, he should treat the patient without confinement to bed or bed-room, and even, if the weather be fine, allow exercise out of doors in shaded situations. The principles which I thus suggest to be applied in the treatment of scrofulous inflammation of the eye, have been advocated by writers on disease of this nature, both ancient and modern, and are therefore not advanced as original. Mr. Carmichael long ago inculcated similar doctrines in his essay on the Nature of Scrofula.

"While treating of the other forms of inflammation of the eyeball, I entered at such length into inquiries respecting the value of the various remedies proposed for its relief, that it is unnecessary to reconsider them here in detail. Antimonials, mercury, iodine, turpentine, iron, cinchona, sarsaparilla, guaiacum, and even colchicum, may, I conclude, be made as available, with the necessary limitations which circumstances demand, in scrofulous, as in the idiopathic, syphilitic, or rheumatic species. It is necessary, however, to suggest some modifications of these agents, to adapt them to the treatment of this form of disease. In a well-marked acute attack of iritis, or inflammation of the eyeball, occurring in a scrofulous subject, mercury must be given as under similar circumstances in other varieties, but the practitioner should not forget that he has to deal with a constitution which will not ultimately bear with impunity the effects of this remedy, as well as the ordinary or healthy one; and also, that in such a state of constitution, the beneficial effects of a full and free course of mercury, are not so apparent or decisive as in a sounder state of the system. The medicine should be more slowly and cautiously introduced, unaccompanied by that debilitating treatment so often adopted in other cases, and it may even be given in combination with tonics and during the use of nutritious food. The preparation to be used requires consideration. The blue pill, with or without opium, as the state of the bowels demands, will generally prove sufficient, and in less acute cases, the compound calomel pill, commonly called Plummer's pill, may be found preferable. Corrosive sublimate (the muriate or bichloride of mercury), has been much extolled, and I believe, extensively employed in this city, in the more chronic or protracted forms of inflammation both of the eye and conjunctiva, but as the advocates of it generally direct it to be dissolved in tincture of cinchona, by which it is of course decomposed, no evidence of its superiority is afforded. The value of iodine as a remedy in inflammation of the eyeball, has been considered when treating of the other forms of this disease. It is, however, in scrofulous inflammation, that its influence should be more relied on, if confidence is to be reposed in the opinion entertained respecting its virtues in this disease generally. I do not think that a practitioner would be justified in relying on iodine in any form, as a means of arresting in its first stage, acute inflammation of the eyeball, caused or modified by scrofula, but I think he may place reliance in it as an aid in the more advanced stages of the disease, either in combination with or following mercury. In cases of this kind, the plan I pursue is to give mercury in moderation, until it begins to produce its usual effects, and then to commence with the iodide of potassium. Five grains of the pilula hydrargyri is given three times a day, until the gums become affected, and then continued in five-grain doses at night only, giving from five to ten grains of the iodide of potassium, in the morning and middle of the day. After this has been persevered in until the mercury has had a fair trial, the pill at night is discontinued, and the iodide substituted for it, either alone or in decoction of bark, if the stage of the disease, and the state of the constitution demands it; or the iodide of iron in syrup, in the dose of three or four grains daily is given. In those cases in which the inflammation is a repetition of former attacks, or a relapse, or where it has become refractory or chronic, mercury having been freely and repeatedly used before, the iodide of potassium, or iodide of iron affords an obvious resource, and under such circumstances I have seen it, I think, effect as much as could be expected from any other remedy.

"In the more advanced stages of the disease, or even at an earlier period, if it does not yield to the remedies above enumerated, tonics and nutritious food, removal to a more healthy locality, and every other means usually resorted to in scrofulous affections, must be adopted. Cinchona or other vegetable tonics, in such form as the practitioner may consider best suited to each individual case, may be employed with advantage; and iron, either alone or in combination with other remedies, should have a trial. Patients residing in large towns should be removed to the country, and even from one locality to another differently situated. As to local treatment, little remains to be added to the observations already made under this head, in treating of the other species of inflammation, except enjoining more caution as to the application of blisters, which in scrofulous subjects so often are the cause of enlargement of the cervical glands."

58. *Malignant Disease of the Eye.*—Dr. DALRYMPLE showed to the Pathological Society of London, March 15th, 1847, a series of preparations (accompanied with drawings), of the various forms of Malignant Diseases of the Eye, in order to prove the futility of operative interference in any stage of such affections. The result of extended experience had convinced him, that where the globe had been extirpated at the earliest possible stage of the disease, the death of the patient was brought about, sooner or later, by the formation of secondary tumours in the brain, in the same manner as when the globe had been extirpated at a more remote period of the disease. The particulars of several of the specimens were detailed at length, proving the above assertion; and the following case, Mr. Dalrymple observed, might be considered a type of the average course of the disease:—

A child, two or three years old, came under his care in the beginning of the year, some time back. At the back part of the eye were observed three small deposits of fibrin, leaving a triangular space of the choroid between them. These gradually extended forward to the ciliary boundary of the choroid, and became vascular, pushing the iris forward into the anterior chamber. They became gradually more and more vascular, the triangular space between them gradually diminishing. In proportion to their increase, the iris became more prominent, and by degrees vascular. In May, the globe was hard, sclerotic, bluish, iris more convex.—August: globe enlarged, iris narrower, lens in a state of incipient opacity, lids of a purplish hue, pain in the globe.—September: eye enlarged, pupil large, lids livid and swollen, palpebræ cannot be closed: deep-seated sclerotitis, dark blue zone near attachment of cornea, fungoid mass in the anterior chamber, with effusion of lymph; headache.—December: globe gave way, conjunctiva crimson and velvety, slight bleeding, headache, and pain over brow.—January: Tumour equalled size of apple, covered with dark crust: drowsiness, emaciation.—March: Tumour much enlarged.—On the 25th: Stupor, convulsions, death.

On the post-mortem examination, small tumours were observed, connected with the bone under the scalp. Dura mater opposite the tumours, soft and thick, as also arachnoid. Ventricles contained one ounce of clear fluid; a large encephaloid tumour at base of brain, limited by the olfactory nerves; the pons Varolii, and the sides of the middle lobes, involving the right optic nerve, the third pair, however, being but little interfered with. Sclerotic crushed and emptied of its contents, the cavity of the eye being filled by a reddish medullary growth, traced from where the optic nerve entered. Muscles and lachrymal gland unaffected.

Another reason contra-indicating the removal of the globe, remarked Mr. Dalrymple, is the occasional existence of a disease of the eye, in no way distinguishable, as regards physical appearance, from the first stage of malignant disease. The disease consists in the effusion of an albuminous fluid between the retina and choroid, causing protrusion of the lens, and giving rise to the cat's eye appearance. In the two specimens which were exhibited as illustrative of this affection—in the one, there was mere serous effusion; in the other, serous effusion, accompanied with the deposit of flocculent tripe-like looking lymph, on the external surface of the retina.—*Lancet*, March 27, 1847.

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59. *Case of Encephaloid Disease of the Brain, inducing Amaurosis.*—Mr. J. DALRYMPLE communicated to the *Royal Med. and Chirurg. Soc.*, May 11th, the following case of this character. Miss B., about twenty-eight years of age, had been totally blind about four years; but the ocular symptoms date nearly a twelvemonth previous, commencing with dimness of vision in one eye, and gradually involving both in total darkness. There were no morbid appearances in either eye, and with the exception of the iris being sluggish, there was little to indicate the extent to which the blindness had proceeded, for the pupils were never much dilated, and never wholly lost the power of contraction. About the time Mr. Dalrymple first saw the case, there were obscure symptoms of some disease of the brain, severe pains at the back of the head, some partial numbness of one side of the face, and occasional jerking of the muscles of the right arm and leg. These symptoms entirely disappeared under a full course of mercury, and never returned in any noticeable degree. The blindness, however, continued. By careful dietetic and hygienic treatment Miss B. enjoyed good health, only

complaining of occasional vertigo, and subject to frequent attacks of "faintishness," which occurred at irregular intervals, and lasted but for a few minutes. In the first week of Feb. 1847, this lady died suddenly, with little or no premonitory symptom or illness. On examination of the body the day after death, a large encephaloid tumour was found at the base of the brain, involving the chiasma of the optic nerves, and extending back as far as the pons Varolii; then entered the middle lobe of the brain, as high as the level of the lateral ventricle, on the right side, which it compressed, and nearly obliterated. The left side of the brain was healthy. The third nerve, on the right side, passed through the tumour; and the fifth nerve on that side was partially overlapped by it. No other nerves suffered by its pressure. This lady had an attack of measles three years previous to the development of any ocular symptoms. This attack was very severe, accompanied by delirium, strabismus, and dimness of vision; and although it was supposed she had entirely recovered from this illness, the author of this paper surmises the origin of the encephaloid disease may be referred to the cerebral inflammation which occurred at that time.—*Lancet*, June 5th.

60. *Structure of Conjunctiva.*—According to ARLT, who has recently examined the minute anatomy of the conjunctiva in its healthy and diseased state, the transparent portion of this membrane which is extended over the cornea, is composed entirely of layers of pavement-epithelium; no fibro-cellular tissue being discoverable in its structure except at the very borders of the cornea. At these parts the arrangement of the fibro-cellular tissue is such that the simply epithelial portion of the conjunctiva is not round, but has a transversely oval form. In the eyes of old persons, however, and in those of individuals who have suffered much from congestive or inflammatory affections of the conjunctiva, fibro-cellular tissue is frequently developed in the simply epithelial structure covering the cornea; and the result of this is the more or less opaque grayish-white aspect, which the eyes of such persons are apt to present.—*London Med. Gaz.*, August 1847, from *Schmidt's Jahrbücher*, 1847.

MIDWIFERY.

61. *Case of Delivery without operative aid, through a pelvis extremely deformed by Malacosteon.*—Professor SIMPSON, of Edinburgh, relates, in the *Monthly Journal of Medical Science*, July, 1847, a case which is probably unique in the annals of Midwifery, in which a child at the ninth month of utero-gestation, was delivered through a pelvis under one inch in its narrow, and two and a half in its long diameter, without operative aid. The subject of this case, Mrs. D., was 34 years of age, and had been married ten years. Two years subsequent to her marriage, (1837) she was attacked with pains in the back and sides, and stiffness about the ankle-joints, from which she never entirely recovered, so as to be able to walk without support. In 1840 she fell, while walking with a staff across her room, and after this, the pains in the limbs were, for a considerable time, far more severe, and the lameness greatly increased. Since recovering she has been able to walk out of doors with the assistance of crutches. But various bones of the trunk and extremities have become shortened and deformed under the effects of the malacosteon. The spine is bent backwards and outwards in the form of a bow, with the ribs and sternum correspondingly displaced. Some of the phalanges of the fingers are bent: the right thigh bone is curved forward into a semicircular shape. And from being a handsome and somewhat tall woman, she has shrunk down, during the course of the last seven or eight years, into a deformed, dwarf-like figure, measuring about four feet in height.

She never had become pregnant until June, 1846, and she did not at this time become aware of her pregnancy, until it was far advanced. She then applied to Mr. Wiseman of Cupar, who, on examining into the condition of her pelvis, at once found that its outlet was extremely contracted, but the pregnancy was already so far advanced as to preclude, under such a degree of deformity, the idea of delivery by the induction of abortion or premature labour. Besides, all attempts to

touch the os uteri proved ineffectual, so that none of the ordinary means of arresting pregnancy, and exciting uterine action, could have been put into practice.

Early in March, Prof. Simpson saw her with Mr. Wiseman. "She was quite incapable," he states, "of moving or turning in bed without assistance. The uterine tumour was high, and pressed over to the right side. On applying my stethoscope to it, I readily detected the usual rapid pulsations of the fœtal heart. I found fully borne out the correct description which had been previously given me of the excessive deformity and contraction of the pelvis. The sacrum was straight above, so that its promontory did not, probably, encroach on the brim; but its inferior extremity was strongly and anormally curved forwards. In front, the walls of the pelvis felt doubled or collapsed together: and the outlet, which was the only part that could be very accurately examined, was exceedingly deformed, and diminished in size. The transverse diameter was particularly contracted. I found it impossible to introduce two fingers between the tuberosities of the ischia. Hence, this diameter of the outlet was evidently under an inch. Posteriorly, or opposite the sacro-sciatic ligaments, there was transversely more space, but the strong anterior curvature of the coccyx and lower end of the sacrum seemed to curtail the conjugate diameter of the opening, and to prevent the probability of its admitting, when fully dilated, more than three, or, at most, four fingers even in this direction.

"Under these circumstances, with a living child advanced to the eighth month, and a pelvic outlet so extremely contracted, I had no hesitation in coming to the same conclusion as the patient's medical advisers had all previously done,—namely, that the Cæsarean section was the only practicable mode of delivery."

On the morning of the 28th April, Prof. S. received from Mr. Wiseman a note, dated the previous night, intimating "that our patient had begun to complain of labour pains—that the os uteri could be felt projected low down into the vagina—that it was not opened more than two or three lines—and that the presenting part of the child could not yet be detected." "Along with some professional friends who had agreed to accompany me, I forthwith proceeded to Cupar, a distance of about thirty miles. On arriving there, we were surprised to hear that the patient was delivered, and our surprise was only increased by learning that no kind of instrumental aid had been required. A visit, however, to the room in which the child was, readily solved the apparent riddle.

"The infant had been dead for some time *in utero*. It looked nearly the natural length, and as it lay extended on the table, it measured 18½ inches from the crown of the head to the heels. But its limbs and body were thin, lank, and atrophied; and its weight was only 3 pounds 2 ounces. Its head appeared very large and disproportionate in size, and, indeed, had been considered hydrocephalic. This seeming increased volume, however, was not the consequence of effusion, but the result of putrefaction. The encephalon was in a dissolved and semi-fluid state; and as the head lay on the table, it was extended and flattened out laterally and superiorly, as if it consisted of a bag or bladder, half-filled with liquid or semi-liquid contents; and such, in fact, it really was. For all the bones of the arch of the cranium were separated from their attachments, and floated about in the dissolved and liquefied cerebral matter. The bones of the basis of the skull were also loosened, and more or less separated from each other—a rarer occurrence. On handling the vertex, the first piece of bone which I touched was the orbital portion of one of the ossa frontis. The symphyses, even of the inferior as well as of the superior maxillary bones, were loosened, and admitted of free motion. And the component parts of the head and face were so easily displaced and compressed that, on placing one of my fingers in the lower occipital region behind, and another on the nose or cheek in front, I found that, without any considerable degree of exertion, the two could be made to approximate to within a few lines of each other. Yet the skin of the scalp and face was continuous and entire, the epidermis only being separated at different parts. The chest and abdomen of the child seemed quite soft and pliable, though not in so disintegrated a state as the head.

"Thus far the putrid and diffluent state of the fœtus appeared to afford an easy explanation of the possibility of its transit through the very contracted pelvic outlet of the mother. But I was anxious to have more full and complete proof that the fœtus, even in this state, was capable of passing through an aperture of di-

mensions so small as we knew the pelvis to present in the case of Mrs. D. In order to obtain this proof I got oblong openings of two or three different sizes, cut in plates of white iron. The smallest of these perforations, however, though only 3½ inches long by ⅞ broad, proved unnecessarily large for the experiment. We diminished it by filling it up at one end with strong, thick, and perfectly unyielding sole leather, so that the whole opening measured only 2⅜ inches in its largest, by ⅞ of an inch in its shortest diameter; and yet through this aperture the child was pulled without any great degree of force or difficulty. In dragging the infant through this aperture, no particular resistance was met with from the bones of the head and face; but the size of the liver impeded its transit for a minute or two, as the lower part of the thorax was passing through the metallic opening. Dr. Graham, Dr. Ziegler, Dr. Weir, Mr. Wiseman, &c., witnessed these experiments with me; and, if our limited time had allowed us to remain longer in Cupar, and to have got another plate perforated, probably we would have found the child capable of passing through an aperture one or two lines smaller in some of its dimensions.

"The placenta had been preserved. It was small and atrophic, and contained, scattered through it, a number of those white tubercles (as they are sometimes improperly termed), which we so often see connected with, and causing marasmus and death of the fœtus in utero. Some of these tubercles or fibrinous deposits were of the size of hazel-nuts, or larger.

"The history of the delivery had been this. Slight labour pains had come on during the afternoon of the 27th. She was seen in the course of the evening by Drs. Graham and Grace, and Mr. Wiseman, who found the os uteri beginning to dilate, but the pains were not severe, and the husband and attendants of Mrs. D. all went to bed. About one o'clock in the morning of the 28th, Mr. Wiseman was raised, the waters having broken about an hour previously, and the uterine contractions having become strong and bearing down. When Mr. Wiseman reached the house of the patient, he found the soft scalp of the child already bulging through the external parts. Some detached bones, included in the portion of scalp that had passed, allowed him to obtain a firm hold of the protruded portion of the head, and thus enabled him to use some extractive force. By thus assisting the effects of the pains, the child was entirely born about half an hour after Mr. Wiseman's arrival. The mother has made a very good recovery, and declares that 'having a child is nothing.'

"There are no sufficient data to determine at what precise time the infant died. Milk had been discharging from the nipples for three or four weeks before delivery; but whether the child had perished about that period it is impossible to say. Mrs. D. deceived herself with the idea that she felt it living and moving, up to the time of delivery."

Prof. Simpson offers the following inferences which the history and details of this case suggest to him.

"1. It has taught me," he says, "and is, I conceive, calculated to teach others, a strong lesson of caution in regard to our *prognosis*, under apparently even the most desperate circumstances. In such rare forms of complication as this, we must depend for our prognosis, &c., upon the anterior observations and recorded facts of others. Here, all such records led me to expect a very different result, and offered no hope whatever of such a fortunate termination as actually occurred.

"2. The case affords a new and striking illustration of the just and well-known remark of Dr. Denman, that 'the resources of nature in everything which relates to parturition are infinite, and constantly exerted for the preservation of both the parent and child; yet when the two objects are incompatible, the life of the child is almost uniformly yielded to that of the parent.'* And the mode and mechanism by which nature brought about this unexpected result in the present instance, are highly worthy of special notice. For, *first*, she set up a diseased condition of the placenta, which prevented the full and proper nourishment of the fœtus, and thus restrained, as far as possible, its development and growth. *Secondly*, she carried this state of marasmus to such a degree, as at last proved slowly fatal to the child, without superinducing that expulsive action which generally soon fol-

* Practice of Midwifery, p. 415.

lows the death of the infant. *Thirdly*, the dead infant was subsequently retained for so long a time in utero, that not only the bones of the cranium, but the bones of the basis of the skull and face were loosened and separated from each other, and the head and other parts of the body thus rendered readily and easily compressible.* And, *lastly*, the emaciated, dead, and highly putrefied infant, after being thus reduced to this diffluent and compressible mass, and now capable of being moulded to the contracted apertures of the pelvis, is ultimately and without difficulty expelled through them by the supervention of natural uterine contractions. Each stage and step in this mechanism was necessary for the success of that which followed it, and the imperfection or omission of any one of them, would probably have entirely subverted and prevented the very fortunate and very unlooked-for result that occurred from the combination of the whole.

"3. Does the mode in which the delivery was effected in this instance by nature, suggest any measures of practice which, under similar complications, we could induce and imitate by art? I put this question, because, in the greater deformities of the pelvis, all the standard operations and means which we employ for delivery, are, in fact, imitations of processes and operations which nature herself employs under the same conditions. When the pelvis has been much contracted, abortion has occasionally come on in the earlier months and saved the mother; or premature labour has supervened about the seventh month, and saved both the parent and child. These natural processes we imitate successfully, in the artificial induction of abortion and premature labour. If, in morbid contraction and deformity of the pelvis, the pregnancy goes on to the full time, nature is still sometimes capable of delivering the mother by other and various measures. Occasionally, during labour, the symphysis pubis has been rent asunder under the intense and wedge-like pressure of the infant's head; or the uterus has lacerated,

* No individual case in midwifery has given rise to so much discussion, as that of Elizabeth Sherwood. Her pelvis was estimated by Dr. Osborne as below the lowest standard which I have given in a preceding page, as capable of allowing of the passage of a child by embryulsio, being only about ¾ of an inch from the sacrum to the pubis; and yet he delivered her successfully by craniotomy, after working and pulling for three hours with the crotchet. Many authors have stated that Dr. Osborne must have undoubtedly under-measured the pelvis of Sherwood;—and Drs. Hull, Burns, Hamilton, &c., have denounced the operation of embryulsio as "impracticable," if Dr. Osborne's measurements were at all true and accurate. Dr. Campbell, for instance, observes: "It would be idle to enter largely on the refutation of this extraordinary case, since Dr. Osborne's narrative of what he thought he had accomplished, is irreconcileable with common sense; for how could the base of the cranium, which is 1½ inches in thickness, and nearly three in breadth, be brought through the aperture which he describes. A fair estimate" (Dr. Campbell continues), "of the utter impossibility of effecting it, may be afforded by the simple experiment of forming in a plate of hard wood, an opening in shape and size exactly corresponding to the pelvis of Sherwood, and attempting to force through it the base simply, divested of the other portions of the skull." (*Midwifery, pages* 317 *and* 318.) In the case of Mrs. D., I obtained the corroborative evidence afforded by the very experiment which Dr. Campbell here properly suggests; and I have already stated the facility with which the child was passed through the perforated plate. In Sherwood's case there was, I believe, the same reason for the practicability of delivery, for the fœtus seems to have been in the same putrid and decomposed state, as Mrs. D.'s child, and perhaps the bones of the face and basis of the cranium were in a similar way loosened and compressible. "The whole body of the fœtus was," to quote Dr. Osborne's own words, "in the most putrid and almost dissolved state." *See p.* 101 *of his Essays.* —But, besides, the brim of the pelvis in Sherwood was in reality not so small as the measurement of its conjugate diameter would seem to indicate. During delivery, the os uteri was pulled by Dr. Osborne over to the right side, or to the *space* intervening between the line of the conjugate diameter and the right ilium. *Here* there was an oblong aperture 3 inches long, (as measured from the ilium to the symphysis pubis,) and 1¾ inches broad; and hence, in fact, an aperture as great as Drs. Hamilton, Burns, Churchill, Ramsbotham, &c., deem necessary for the performance of embryulsio; and greater than that through which we pulled Mrs. D.'s child.—See drawing of the brim of Sherwood's pelvis, in *Dr. Hull's Defence of the Cæsarean Section.* Pl. v., fig. 1.

or, as has happened now in two recorded cases, both the uterus and abdominal parietes have simultaneously ruptured and allowed of the escape of the child through this double opening; or the bones of the child's cranium have become deeply compressed and fractured, so as at last to allow the reduced head to pass; or the same has been effected by the infant dying, putrefying, and at last its scalp and sutures bursting, so as to produce the necessary diminution in the size and dimensions of the encephalon. These several operations of nature are all imitated by art, in the respective operations of symphyseotomy, the Cæsarean section, cephalotripsy, and craniotomy. And while art thus adopts the operative principles of nature, she attempts to improve both upon their facility and safety, by selecting an earlier, and hence less dangerous period for their performance; and by making the required openings and lesions by cutting instruments, instead of submitting to the chance of their being made by nature, by means, simply, of an enormous and hazardous expenditure of muscular effort and compression on her part.

"But, I repeat, does the mechanism of the delivery in Mrs. D.'s case, suggest any principles for imitation? Let us consider the answer, as it might be varied by the *date* of the pregnancy of the mother; and according as she had reached the periods, *first*, of artificial abortion; or, *secondly*, of premature labour; or, *thirdly*, had already advanced to the full time.

"The case shows, that through an opening of very small dimensions, a child may pass, provided it be in a very compressible state. So far it evidently suggests that the induction of *abortion* at the 4th or 5th month, when the head of the fœtus is still small, soft, and very easily reducible, would, as long ago proposed by Cooper, &c., succeed in such extreme deformities, in saving the mother from many of the dangers accompanying delivery at a later period of utero-gestation. I have stated above that Mrs. D. applied to Mr. Wiseman at a time when it was already considered too late to have recourse either to artificial abortion or premature labour; and further, the high position of the os would probably have rendered either of them impracticable.

"The induction of *premature labour* at or about the seventh month, would not, of course, have sufficed with a pelvis of such small dimensions, unless we could modify the operation so as both to produce the death of the child, and *retain* it in utero, to allow of its structures becoming dissolved and disintegrated before labour at last supervened. Now, we have no known means of inducing that diseased state of the placenta, which produced the attendant emaciation and death in the case of Mrs. D.'s infant; nor am I acquainted with any measures which would destroy the life of the child in the later months, without superinducing labour. The retention, however, in utero of the infant, and its putrefaction, would be as necessary for success, as its death, under such great degrees of contraction. And the result shows, that when the pelvis is much deformed, and labour with a *dead* child is threatened, or the infant is destroyed by craniotomy, the longer we can retain it in utero without danger to the mother, and the more it thus become putrefied and disintegrated, the easier will its ultimate expulsion or extraction prove.

"Lastly, suppose a patient with a very diminished and deformed pelvis, to have arrived at the *full time* of utero-gestation, does Mrs. D.'s case suggest any new principles or modifications of treatment for the delivery of the mother? I believe that, under these circumstances, our conduct and practice should be, in a great degree, regulated by the state of the child. If it be *alive*—as ascertained by auscultation, &c., and the pelvis is as small as in Mrs. D.'s case, or even half an inch larger in its measurements, then I am decidedly of opinion that it is our duty to perform the Cæsarean section. We have two human lives committed to our charge, and it is our duty to try to preserve both, provided we can attain that object without subjecting the mother to a degree of danger much greater than she would otherwise undergo. Let us take, however, the other alternative, and suppose the child already *dead*. With this complication, most British accoucheurs would attempt delivery by craniotomy, if the dimensions of the pelvis permitted at all of the possibility of it. And the case of Mrs. D. seems to me to suggest one means of rendering it thus possible, under states of contraction where it is, at present, properly regarded as in the highest degree unsafe or totally impracticable. The grand obstacle to the delivery of the child by embryulsio, in greatly contracted pelves, arises from our want of means of reducing the size, or altering the

shape and compressibility of the bones of the base of the skull and face. In Mrs. D.'s child, nature had disintegrated and separated these bones, removed, in fact, this obstacle, and thus rendered the delivery not only possible but easy. Could we imitate or induce this same fortunate result by artificial means? All our present means of reducing the size of the fœtal head in embryulsio, are limited to the destruction of the arch of the skull. I am not aware that with any proposed form of osteotomist,* we are capable of cutting or disintegrating the base of the cranium or face, when the pelvis is diminished to 1¾ or 1½ inches in its shortest diameter. Yet, probably, some modification of mechanical means would give us the power of effecting this desirable object. The common perforator might enable us to loosen and break up the bones of the basis in some cases, in the same way as with it we break up the arch of the skull. The disjunction or fracture of these bones, without their removal, might prove sufficient to permit the required degree of compressibility and alteration of shape. Or the common bone-forceps of the surgeon, or a modification of such powerful pliers as are used in dividing the needles in the operation of harelip, &c., might answer. At all events, the object seems anything but a hopeless one, more especially when we call to recollection that modern surgeons are now provided with mechanical means which sometimes enable them to seize, break up, and extract from the cavity of the bladder, large and solid stones,—and that, too, through a canal relatively so small and elongated as the male urethra.

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62. *Nature of the Membrana Decidua.*—M. Coste read a paper on this subject before the Academy of Sciences on the 24th of May last, in which, after alluding to the generally received theory—(viz., that the cavity of the uterus becomes, after impregnation, completely lined by a membranous decidua, thrown out from its mucous membrane; that the ovum, on arriving at the opening of the Fallopian tube into the uterine cavity, can only proceed in its course by pushing this first-formed membrane—the decidua vera—before it, and so inverting a portion of it, by which it will surround itself with another tunic, which, according to this view of its formation, is called decidua reflexa, the two retaining the ovum in its position, and holding between them hydroperionic liquid,) he states that several facts for a long time led him to doubt the foregoing theory of the deciduas, but that he was disinclined to call it in question openly, until he had made such careful investigations as to convince himself of its error, and such as might lead him to the truth. With these objects, he has opened a great number of the bodies of women who have committed suicide, and after several years' experience, he believes he has collected such decisive observations on gestation in the human species, as to remove all doubts from any subject connected with it. He announces this present paper as the first of a series detailing the results of his researches. The present note conveys his views respecting the entry of the impregnated ovum into the uterus, and the formation of the decidual membranes.

"There is never produced normally in the womb of the human female, neither before nor during gestation, any false membrane, or hydroperionic fluid, and, consequently, the deciduous membranes, as represented, are purely ideal.

"The ovum freely traverses the Fallopian tubes, and penetrates at once into the uterine cavity, and is brought into immediate contact with the hypertrophied

* The Kephalepsalis of Dr. Campbell appears to me to be an instrument preferable to, and more powerful than any of the forms of osteotomist invented by Dr. Davis or others. Yet, as we have already seen, Dr. Campbell believes embryulsio to be impracticable, even with its assistance, in a pelvis less than 3 by 2 inches. It is almost unnecessary to add, that the French operation of Cephalotripsy, is founded on the idea of crushing and compressing the bones of the base as well as of the circle of the cranium. It is used by some of the leading accoucheurs of Paris, instead of craniotomy, particularly in cases where the child is dead, and the pelvis below the dimensions that would admit of the use of the forceps. But the instrument with which the operation is performed—the Cephalotribe, is of such enormous dimensions (its blades being of solid iron, 1¼ inch wide, the whole above two feet long and several pounds in weight), that it could not, of course, be applied in cases in which the pelvis was contracted to any extreme degree.

mucous membrane, depressing it at the point where the placenta is hereafter to be developed; and the mucous membrane itself, influenced by the action the ovum sets up in it, swells and rises as a prominent ring around it, or as a circular fold, which at length covers over and encloses it, constituting what has been named the decidua reflexa. As this coat, according to my observations, is a prolongation of the uterine mucous membrane, it has, at the first, the same structure as it. It is glandular and vascular in all its extent, like the mucous membrane. Later, however, all these traces of organization fade and disappear, but their existence may be very readily recognized in uteri during the first month of gestation. I have several specimens in my collection which leave no doubt on this matter. We may also remark, on the most prominent point of the reflected layer, a sort of cicatrix or umbilical depression, which indicates the spot where the circular fold of the uterine mucous membrane to envelop the ovum, was effected.

"This, then, in the human species, has no relation, except with the mucous membrane of the uterus; and when, in cases of abortion, or after parturition, the ovum is expelled, it is the exfoliated mucous membrane which it carries away with it. The results which I have just made known, differ so much from the views generally received, that I determined not to expose myself to their responsibility, until the facts had become irresistible. I now offer them confidently, and am persuaded that if no one as yet has been able to explain the problem, it has arisen from the difficulty of procuring wombs in an early stage after impregnation."

In conclusion, M. Coste observes, that he is not alone in his belief of the error of the present opinion respecting the early history of the ovum, since Dr. Sharpey too partakes in it; and that the latter has proposed two explanations, one of which may readily be reconciled with his own views.

At the séance following the one on which the preceding paper was read, a communication was received, calling attention to the fact that in M. Valentin's Report on the Progress of Physiology, it was mentioned that M. Pappenheim also was opposed to the received opinion regarding the ovum and its membranes.—*Lancet*, July 3, 1847.

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63. *Prevention of Abortion.*—In the number of the *Dublin Quarterly Journal* for May last, Dr. Griffin advances, in one of his "medical problems," the question whether, when miscarriage or premature labour takes place, at fixed periods, from the influence of an acquired habit, the periodical movements may not be prevented by such remedies as prevent the return of epileptic fits or agues? In answer to this query, he relates the case of a lady who had miscarried several times at the third month, and came under his care in her sixth pregnancy. Dr. Griffin could not detect any obvious cause of her former abortions, and as all other means had been tried, it occurred to him to try a course of some metallic tonic, given on the same principle as in epilepsy. She therefore took two grains and a half of oxide of zinc, with extract of hops, three times a day, followed by valerian, aromatic spirits of ammonia, and decoction of snake root. She was advised, instead of lying upon the sofa, to take the air as much as possible. Under this treatment she passed the usual period of miscarriage to her great joy. Happening, however, to meet soon after with causes of mental excitement, she experienced the premonitory symptoms of abortion to which she had been accustomed; but by taking a grain of opium every hour till the pain ceased, the accident was warded off, and she was soon able to resume the zinc. She went her full time. A second and still more striking case is also narrated.

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64. *Spontaneous Evolution.*—Dr. Keiller communicated to the Obstetrical Society, of Edinburgh, the following example of this. Dr. K. had seen the patient at the commencement of labour, but had left her in the hands of a midwife. When summoned again, the case had assumed the following aspect:—The liquor amnii for several hours discharged, a large swollen arm occupying the passages, the os uteri firmly grasping the obtruded shoulder of the child, and the uterine contractions unusually violent and continuous, a state of matters that had, in all probability, been encouraged, if not induced, by large doses of the ergot of rye, which

the "*midwife*" confessed had been administered for the purpose of bringing the case to a speedy termination.

Dr. K. failed in his repeated attempts to insinuate his hand into the uterus, in order to complete the delivery by the operation of turning; notwithstanding the free use of opium, the uterine contractions continued for some time excessively severe, when, during a violent pain, the arm was suddenly withdrawn from the passages, and the feet and body were almost simultaneously expelled, a rapid and complete evolution having spontaneously occurred. The child was of course dead. The mother made a good recovery.—*Monthly Journal of Med. Sci.*, July, 1847.

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65. *Cases of Fatal Hemorrhage from the Umbilical Vessels in Infants.*—Dr. SIMPSON read to the Obstetrical Society of Edinburgh, a detailed account of two fatal cases of hemorrhage after separation of the cord. They occurred in India, in the practice of the late Dr. Christie, and were communicated to Dr. Simpson by Dr. Christie, of Dundee.—Both infants were of the same parents, who were quite healthy. The hemorrhage did not come on till some days after the cord had separated. The ordinary means for arresting hemorrhage by pressure, and various styptic substances were used, but only with very temporary benefit. Both children died on the eleventh day. In both instances there was a degree of jaundice. In the first case, the state of the vessels was not examined, but in the second the umbilical vessels were found to have their walls much thickened and indurated as far up as the liver.

Other cases were mentioned, and the transfixion of the bleeding part with a needle and including ligature (as in hare-lip), was described as the best plan of treatment.—*Ibid.*

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66. *Fatal Hemorrhage from the Umbilical Cord three days after Birth.* Dr. KEILLER stated to the same society that he had been called upon to examine the subject of the following case of *fatal umbilical hemorrhage*, which recently occurred in the practice of a gentleman in town.

About half past one, P. M., on Tuesday, the 3d instant, Mrs. ——, aged 29, was delivered of her third, a fine plump male child. The infant continued quite well until five o'clock, when it began to vomit a quantity of green bilious matter. On Thursday morning, however, the child was apparently well, being able to suck greedily, but again vomited towards the afternoon. About two, A. M., on Friday morning, the mother first discovered that the binder, &c., of the child were "soaked with blood from the navel." (She stated that she had changed the linens of the infant about twelve P. M., and did not then notice the existence of any bleeding.) The practitioner who delivered her was immediately sent for, but could not visit at the time; he, however, told the parties to apply a ligature below the one that was already around the cord, but they did not *deem it their duty to interfere*, "but preferred waiting until the gentleman could find it convenient to come and tie the cord himself," which was not until between four and five o'clock, when he visited and examined the bleeding point which was at the root of the cord, and applied to it the nitrate of silver, which seemed at the time to be sufficient to prevent the farther continuance of the hemorrhage. Before half an hour had elapsed, however, he was again summoned, when he tied a ligature around the umbilicus, embracing a portion of the skin which formed its circumference. This treatment, however proved too late; the child died in a very few minutes after the application of the ligature.—*Ibid.*

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67. *Fungus, or Fungating Excrescences of the Umbilicus in Infants.*—Dr. SIMPSON stated to the Obstetrical Society of Edinburgh, that in infants, after the umbilical cord has dropped off, instead of the raw surface contracting and cicatrizing, he had several times seen large granulations appear, and a red, elevated, fungus-like excrescence form at the umbilicus, resembling the fungus testis of surgeons. These umbilical excrescences in general shrink and slough after a time, or do so on being touched with alum or other astringents, or with nitrate of silver. In one case which he had lately seen with Dr. Finlay, of Newhaven, this simple treatment had little or no effect. The excrescence enlarged to the size of a cherry, which it likewise resembled in colour. It was apparently insensible to touch, but blood oozed from its red surface under slight handling. It was cauterized several

times with nitrate of silver: but this did not cause it to shrink. At last, after several weeks, a ligature was passed round its base, and in a few days it had dropped off. It had not offered in any degree to return.

Dr. Weir stated that he had met with the same appearance in a family of four or five children. In all of them a similar, but smaller excrescence, formed on the umbilicus. They soon shrunk on being treated with powdered alum.—*Ibid.*

68. *Albuminuria in Pregnant Women.*—M. Devilliers recently communicated to the Society of Medicine of Paris the results of the investigations which M. Regnault and himself have been engaged in making concerning the Albuminuria of Pregnancy. In this condition the affection presents much less distinct and well-defined symptoms, most of which may be readily confounded with those of other diseases of pregnancy. Sometimes no morbid phenomenon manifests itself; and at others there may be heaviness, headache, general uneasiness, some characteristicless derangements of the digestive organs; but no febrile action belonging to this disease in particular. Lumbar pains are so common in pregnancy, that we are unable to distinguish them either by their seat or nature from those which are developed during the acute stage of albuminuria. As to the dropsy, sometimes it does not exist, which, however, is rarely the case; sometimes it is limited to the lower extremities, resembling the simple œdema of pregnant women; and sometimes it is general, and may be mistaken for anasarca dependent on affection of the heart, which, during gestation, is frequently increased to a great extent. There remains then the albuminous condition of the urine: and, notwithstanding what various writers have stated, these inquirers have never been enabled to detect albumen in the urine of the pregnant women who have been presented to their notice under ordinary circumstances. In examples of the disease the quantity of albumen has been found very variable, increasing sensibly during notable disturbance of the circulation, *e. g.*, during the development of intercurrent febrile affections, the period of accouchement, puerperal diseases, or the approach of death.

The affection which especially presents itself as a frequent and important complication of albuminuria is eclampsia. Most of the subjects of puerperal convulsions exhibit evident marks of serous infiltration. In some, however, this symptom is absent; but the authors of this memoir have *constantly* found albumen in their urine. Of course all the women exhibiting albumen do not become the subjects of convulsions; and the authors have found these absent eight times in twenty cases; but they believe that more than a mere coincidence exists between the two diseases, founding their opinion upon the fact, that in ordinary albuminuria various cerebral and nervous phenomena are exhibited, and that during pregnancy these last acquire a special development.

Contrary to what is observed in ordinary cases, the albuminuria of pregnancy may terminate in a rapid and complete cure after confinement, however grave the case may have appeared. It may pass into the chronic state, but this is more rare. It predisposes to the same affection in future pregnancies; it may induce abortion; seems to favour the development of puerperal diseases; and at the very least must be considered as a powerful predisposing cause of eclampsia; but of itself, and alone, it does not seem capable of inducing a fatal termination. The prognosis for mother and child is therefore only grave in proportion to the amount of complications. The authors observed 11 deaths in 20 albuminuric women.

Besides the various cadaveric lesions derived from the complications, the authors almost always found renal lesions of various kinds, and not exclusively such as are described as characteristic of Bright's disease; and they feel much disposed to accord to these organic lesions much less importance than is ordinarily attributed to them, and to regard them rather as the effects than the causes of the disease. Indeed, in pregnant women its causes seem to be different from those generally admitted in ordinary albuminuria.

The researches of the authors have proved to them that the blood of women during gestation exhibits a remarkable diminution of albumen, especially in the latter months; a condition which Andral has shown to be favourable to the production of dropsies in general, and one which bears the relation of cause to effect in respect to the present disease. The albumen dissolved in the blood is, in the normal state, combined in certain proportions, with a certain number of saline materials, which allow the blood to traverse the canalicules of the breast, to be

there submitted to depuration, without the transudation of a single trace of albumen; but if from any general cause, from a disturbed condition of the assimilatory powers, the static equilibrium is destroyed, the renal parenchyma may become traversed by anormal elements, and albuminuria induced.—*Med. Chirurg. Rev.*, July 1847, from *Revue Médicale*, vol. i., 1847.

MEDICAL JURISPRUDENCE AND TOXICOLOGY.

69. *New Test for Prussic Acid, and a simple method of preparing the Sulphocyanide of Ammonium.* By Prof. Liebig.—When some sulphuret of ammonium and caustic ammonia are added to a concentrated aqueous solution of prussic acid, and the mixture heated with the addition of pure flowers of sulphur, the prussic acid is converted in a few minutes into sulphocyanide of ammonium. This metamorphosis depends on the circumstance that, the higher sulphurets of ammonium are instantly deprived, by the cyanide of ammonium, of the excess of sulphur they contain above the mono-sulphuret; for instance, if a mixture of prussic acid and ammonia be added to the pentasulphuret of ammonium, the solution of which is of a deep yellow colour, and the whole gently heated, the sulphuret of ammonium is soon decoloured, and when the clear colourless liquid is evaporated, and the admixture of sulphuret of ammonium is expelled, a white saline mass is obtained, which dissolves entirely in alcohol. The solution yields on cooling, or evaporation, colourless crystals of pure sulphocyanide of ammonium. Only a small quantity of sulphuret of ammonium is requisite to convert, in the presence of an excess of sulphur, unlimited quantities of cyanide of ammonium into sulphocyanide, because the sulphuret of ammonium, when reduced to the state of monosulphuret, constantly reacquires its power of dissolving sulphur, and transferring it to the cyanide of ammonium. The following proportion will be found to be advantageous. Two ounces of solution of caustic ammonia, of 0·95 specific gravity, are saturated with sulphuretted hydrogen gas; the hydrosulphate of ammonia thus obtained, is mixed with six ounces of the same solution of ammonia, and to this mixture, two ounces of flowers of sulphur are added; and then the product resulting from the distillation of six ounces of prussiate of potash, three ounces of the hydrate of sulphuric acid, and eighteen ounces of water. This mixture is digested in the water bath, until the sulphur is seen to be no longer altered, and the liquid has assumed a yellow colour. It is then heated to boiling, and kept at this temperature, until the sulphuret of ammonium has been expelled, and the liquid has again become colourless. The deposited, or excess of sulphur is now removed by filtration, and the liquid evaporated to crystallization. In this way, from three and a third to three and a half ounces of dazzling white, dry sulphocyanide of ammonium are obtained, which may be employed as a reagent, and for the same purposes as the sulphocyanide of potassium. Of the two ounces of sulphur added, half an ounce is left undissolved.

The behaviour of the higher sulphurets of ammonium towards prussic acid furnishes an admirable test for this acid. A couple of drops of a prussic acid which has been diluted with so much water, that it no longer gives any certain reaction with salts of iron, by the formation of prussian blue, when mixed with a drop of the sulphuret of ammonium, and heated upon a watch-glass, until the mixture is become colourless, yields a liquid containing sulphocyanide of ammonium, which produces with persalts of iron, a very deep blood-red colour, and with persalts of copper, in the presence of sulphurous acid, a perceptible white precipitate of the sulphocyanide of copper.—*Liebig's Annalen, Lond. Ed. and Dub. Phil. Mag.*, August, 1847. T. R. B.

70. *On the two varieties of Arsenious Acid.* By M. Bussy.—The author first gives a new process for determining the quantity of arsenious acid. This process is based on the employment of standard reagents. The reagent which he uses is permanganate of potash, which M. Marguerite has already successfully employed for the quantitative determination of iron.

When a solution of permanganate of potash is poured into a solution of arseni-

ous acid, it becomes arsenic acid, and the red colour of the reagent disappears. The liquor begins to become coloured, only, when the transformation of arsenious acid is complete. When, then, a standard solution of permanganate of potash is prepared, the quantity of arsenious acid contained in any solution, may be determined by that of the permanganate required to convert it into arsenic acid.

M. Bussy states that the two varieties of arsenious acid, the vitreous and opaque, absorb the same quantity of permanganate, and consequently that the differences observed in their solubility, is not derived from any difference of oxidizement.

With respect to the solubility of the two varieties of arsenious acid, M. Bussy has arrived at the following conclusions. 1. The vitreous, so far from being less soluble in water than the opaque acid, as stated by chemists, is, on the contrary, much more soluble. This difference is nearly in the proportion of three to one at about 53° to 55° of F.; the same quantity of water which dissolves 36 to 38 parts of the vitreous acid, will take up only 12 to 14 of the opaque. 2. The vitreous acid dissolves much more rapidly than the opaque. 3. Neither of the varieties possesses a degree of solubility which is to be regarded as strictly peculiar to it. 4. The opaque acid is converted into vitreous acid, by long boiling in water; that is to say, it then acquires the same degree of solubility as the vitreous arsenious acid, which is such that eleven parts are dissolved by one-hundred of water. 5. Under the influence of water and a low temperature, the vitreous acid is converted into opaque acid, that is to say, a solution of vitreous acid becomes reduced, after a certain time, to the point of saturation which belongs to the opaque acid. 6. The mixture of the two varieties of acid in the same solution, explains the anomalies observed in the solubility of arsenious acid, which, in fact, offers nothing opposed to the principles admitted by chemists. 7. Division, which facilitates the solution of the opaque acid, without, however, increasing its solubility, considerably diminishes that of the vitreous acid, and to such an extent, that this acid reduced to fine powder and levigated, is not sensibly more soluble in water than the opaque acid; this resulting, unquestionably, from a transformation which it undergoes, either at the moment of pulverization, or of contact with water. 8. Acid which has been rendered opaque by the action of ammonia, and acid crystallized in water, act similarly with water, and appear to belong to the same variety. 9. The opaque acid dissolves more slowly than the vitreous, in dilute hydrochloric acid. This circumstance, which thus modifies the nature of the products formed during solution, explains why the luminous phenomena observed by M. Rose in the crystallization of the vitreous acid, are not in general observable with so great intensity in the solution of the opaque variety. 10. The difference which has been observed in the action of the two arsenious acids, on tincture of litmus, is merely apparent. If the opaque acid does not redden the tincture, it is on account of its slight solubility, and especially because it dissolves slowly, whilst the vitreous acid, which dissolves readily, immediately reddens the tincture. But if comparative experiments be made, and the tincture be exposed to the action of the powder, it becomes gradually red, and no difference is perceptible at the expiration of three or four days.—*Comptes Rendus*, May 1847, *Ibid.*, August 1847.

T. R. B.

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71. *Infanticide.*—The following case is of interest, in consequence of a peculiarity in the law of the State of Pennsylvania.

Commonwealth v. *Mary Brown.*—After the testimony had concluded, the Recorder of Philadelphia (Richard Vaux), said the facts which appear are these:—That the prisoner was delivered of a living child; that when accused of having been so delivered, she did not deny it; that she was not aware of her condition prior to her delivery; that the time when, or under what circumstances, the child died, are not known, nor pretended to be susceptible of clear proof; no facts were in evidence which raise the presumption that the prisoner either killed her offspring, or that she was even aware of its death. As to the charge of concealment, the evidence strongly proves that if any concealment existed, it was to conceal its *birth.* Under the act of Assembly of the 17th of April, 1794, the words of which are "if any female shall endeavour privately, either by herself or the procurement of others, to conceal the *death*," &c., the only criminal act is, the con-

cealment of the *death*. So that if the *birth* is concealed, and death unknown to the mother, or even suspected by her or her friends or companions, it seems under the words of the act, that the death following the concealment of the *birth*, is no crime.

In the case of the *Commonwealth* v. *Emenetta Clark*, Judge King has so construed the law, as to place it beyond a doubt, that after the birth, the death must be so concealed as to prevent its being brought to light, whether it was born dead or alive, or whether it was murdered or not. The Commonwealth has failed to establish two facts material to this case: 1st, that the child was a bastard; 2d, that the prisoner endeavoured to conceal the death of the child. The facts go strongly to show, that the child died from the usage it received from the time the mother was taken in labour, to the time the dead body was discovered. The idea of the murder of the child by its mother, is not, in the least degree, sustained by the evidence; that the child was born alive is clear, and the only charge left to be considered is, whether the concealment is such as under the statute is constituted a criminal offence. It has been ably argued by the prisoner's counsel, that the charge of concealment, is only a concealment of the *birth*, and therefore not punishable.

It does appear to me, that the position of the prisoner's counsel is sound, and the prisoner is therefore discharged. To punish such offences in future, the legislature should explain the law referred to; as it stands, in the Statute Book, it is almost a dead letter.—*Recorder's Decisions*, 1846. T. R. B.

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72. *Poisons of the Assamese.*—"A most deadly poison is extracted from a kind of root, denominated *mishmee bih* (or poison), brought from the Mishmee country, on the northeast quarter of Assam. With this, the natives in Upper Assam generally cover the tips of their arrows, and destroy elephants for the sake of their ivory tusks. So powerful, so deadly is the effect of the poison, that the slightest scratch or puncture of an arrow smeared with it, proves fatal; if not instantaneously, at all events, in a few hours after an elephant has been stricken. Deer and buffaloes are also killed in the same manner. *Immediately the animal falls*, the wounded part is cut out, and the flesh is then eaten by the natives, without apprehension of any ill effects arising from the inoculation of the body by the poison; at least, I never heard of a single instance of a person losing his life from having eaten of the flesh of animals killed by poisoned arrows, common as is the practice of partaking of such food. Safety appears to be secured by excising the wounded part."—*A Sketch of Assam, by an Officer of the Bengal Infantry, quoted in London Literary Gazette.* T. R. B.

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73. *Bronzing of Confectionary.*—According to the Police Regulations of Paris, confectioners are allowed to use only gold and silver, as metallic ornaments to confectionary. Copper, bronze, and all the alloys of copper and zinc are prohibited. Some confectioners have, however, employed sham gold; an alloy formed of zinc and copper. A large quantity of confectionary thus ornamented, has been recently seized at Bourdeaux, and an action has been commenced against the confectioner who supplied the articles. He produced some of the powder, which he said he procured of a druggist, who sold it to him as a mixture of talc and oxide of gold. The application of nitric acid and ammonia, however, soon proved that the gold was a copper alloy.—*Journal de Chimie*, Feb. 1847. Nitric acid is perhaps the best test, as some of these alloys very closely resemble red gold in colour. The copper alloy is immediately dissolved by the acid, forming a green coloured solution; gold remains unaffected. These copper alloys are much used in England for ornamenting gingerbread, and Scheele's green and chromate of lead are also employed for the purpose of colouring sugar plums. *De minimis non curat lex.* The English law thinks any interference with this mode of selling poisons, an invasion of the liberty of the subject!—*London Medical Gazette*, March, 1847. T. R. B.

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74. *Case of Poisoning by Turpeth Mineral.*—(Communicated by Dr. Letheby, to the Pathological Society of London.) This substance is a subsulphate of the Binoxide of mercury, and like the other persalts of that metal, is a violent poison.

A young man, aged sixteen, swallowed, on the night of Feb. 19, at twenty minutes past twelve, a drachm. It caused a burning sensation in the mouth and throat, and in about ten minutes he was sick, and vomited a meal that he had taken two hours previously. He now felt scalding pain in the throat, chest and stomach, and this became so severe, that he walked to the London Hospital, where he was admitted under Dr. Frampton. He vomited repeatedly on the road, and was faint and weak. He was admitted at a quarter past one o'clock, and then looked pale and with an anxious countenance; felt cold and complained of sickness, with great pain in the throat and stomach. Sulphate of zinc, with mucilaginous drinks were given. He continued during the night to suffer great pain in the throat and stomach, cramps in the limbs, and violent vomiting and purging. In the morning, in a high state of fever; throat and stomach still painful, the latter somewhat tender on pressure, and so irritable, that nothing would remain on it an instant; tongue and inside of the mouth red and inflamed, feeling raw to him, and bowels much relaxed. Leeches were applied to the epigastrium, and mucilaginous drinks, with opium and henbane were given, without allaying the irritability of the stomach. On Thursday, the purging had ceased, but he still complained of his throat; the breath, also, began to acquire the mercurial fetor, and he spat more than usual. From this time, he became weaker and weaker; nothing would remain on his stomach; his mouth and throat continued exceedingly painful, and he became profusely salivated; the gums acquiring a deep bluish tinge, and beginning to ulcerate at the margins. This condition increased; but he never lost his senses, or became in any way comatose. The debility increasing, he died at eight o'clock of the following Tuesday morning, without any convulsion or struggle, nearly one week after the administration of the poison.

Appearances on dissection; twenty-seven hours after death.—The body was stiff and pale, except the dependent parts. The parotid and submaxillary regions rather swollen; the lips pale, bluish, and the gums purple and ulcerated at the edges. The lungs were so gorged with blood, as to be quite black at the dependent parts. The heart was slightly enlarged and immensely distended on the right side with black fluid blood; on the left, it was nearly empty. The abdominal viscera were rather redder than natural, and showed the meanderings of numerous vessels filled with dark blood; the ascending transverse colon was of a deep leaden colour, and the intestines were contracted throughout their whole course; the œsophagus, from the mouth downwards, was much inflamed, and for about four inches before it joined the stomach, its mucous coat had become opaque, white, and was pealing off in large strips. The stomach contained nearly a pint of dark yellowish-brown fluid; it was not much contracted; its internal surface, especially about the cardia and pylorus, was covered with patches of small petechial spots; elsewhere it had a dirty yellowish-green tint, from the presence of much bile. The intestines were contracted and empty; the internal coat everywhere redder than natural, and the lower part of ilium was covered with numerous isolated petechial spots, of the size of a hemp-seed. This condition was also very evident in the cæcum, and along the whole course of the large intestines; the mucous coat was not anywhere abraded or ulcerated. The liver was enlarged and much congested with dark blood; the gall-bladder was full of bile, the pancreas hard and enlarged; the spleen and kidneys of a deep purple colour, and the bladder empty and quite contracted. The vessels on the surface of the brain were full of black fluid blood. Portions of the intestines were broken down by nitro-muriatic acid, and there was distinct evidence of mercury obtained. The urine was not examined.

The above is an uncommon case, and Dr. Letheby observes, that turpeth mineral is so rarely used in medicine and the arts, that he is not aware of the report of any case of poisoning by it, since the time of Wilmer.

"Among the post-mortem appearances, the most striking were the leaden blue tint of the lips and gums; the ragged ulcerated condition of the latter, the swollen state of the salivary glands, the alimentary canal from the mouth to the anus, redder than natural and studded with livid petechial spots, a condition most manifest from the cæcum downwards. Then again, it is worthy of remark, that the intestines were contracted throughout and nearly empty, and that the colon had acquired a slate or lead colour. The gorged and uncollapsed lungs, together with the distended condition of the right side of the heart, and the emptiness of the

left, pointed to the fact, that death had begun its work at the respiratory organs. This was further evidenced by the turgid condition of the whole venous system, and by the black uncoagulated state of the blood everywhere. In this case there were many points of resemblance to the effects produced by the preparations of lead, especially as regards the blue colour of the gums and the purplish hue of the large intestines, but there were also other points of marked distinction, as in the ulcerated state of the gums, and the universally contracted condition of the intestines and bladder.—*Ibid.* T. R. B.

75. *On the Essential Oil of Bitter Almonds.* By R. B. Grindley.—There is a great discrepancy of opinion among chemists and toxicologists, whether the pure oil of bitter almonds, or hydruret of benzoyle, is poisonous or not. By some, the known poisonous properties of the crude oil of bitter almonds of commerce, are ascribed entirely to the hydrocyanic acid which it contains, while others assert that the oil freed from prussic acid is still a violent poison. The experiments which are mentioned by Dr. Christison and Dr. Pereira would appear to have settled the question, and to have left no further doubt that pure oil of bitter almonds possesses no poisonous properties; but the assertion of the opposite opinion in the *Outlines of Chemistry*, more recently published by Dr. Gregory, has again created doubts on the subject.

As public attention has of late been much directed to this substance, I felt desirous of making some experiments on it, and my results are as follows:

At first, I adopted the usual plan for removing the hydrocyanic acid, by distilling the commercial oil with a mixture of protochloride of iron and lime; the product was still contaminated with the acid, and several repetitions, conducted with every precaution, were attended with no better success. I then adopted, by the suggestion of Mr. Redwood, the following method, which proved most satisfactory. The oil was mixed with an equal quantity of water, and digested in a water-bath with binoxide of mercury, and small quantities of lime and protochloride of iron; time having been allowed for the decomposition of the acid, the whole was introduced into a copper retort and subjected to distillation. The product consisted of pure hydruret of benzoyle, while bicyanide of mercury, benzoate of lime, chloride of calcium, and oxide of iron, remained in the retort, with benzoine and any excess of the ingredients employed.

This process is founded upon the strong affinity which exists between mercury and cyanogen, so that when binoxide of mercury and hydrocyanic acid are digested together, they are both decomposed, bicyanide of mercury and water being formed. The protochloride of iron, which, with the lime, yields protoxide, is introduced to prevent the formation of benzoic acid from the oxidation of the oil; for the same reason, care should be taken to conduct the process with as little access of air as possible. The oil thus procured was pure and colourless. No trace of nitrogen could be detected by Lassaigne's test, which I found to be exceedingly delicate, affording indications of the presence of that body in extremely minute quantities of morphine, narcotine, &c. It consists in adding to a very small quantity of the substance to be tested, in a small German glass tube, a fragment of potassium, about the size of a millet seed, and heating the tube in the flame of a spirit lamp, until the organic substance is completely carbonized; the carbonaceous residue is treated with cold water, and to the clear decanted liquor, a drop of a solution containing the mixed oxides of iron is added; a dirty green precipitate is immediately formed, which, if nitrogen be present, is changed into a bright blue, on the addition of a drop of hydrochloric acid.

Five drops of this pure oil were administered to a rabbit, and no effect being produced, ten more dissolved in olive oil, were given to the same animal the following day, still without any injurious results, except slight irritation, attributable to the acridity of the oil; thus giving satisfactory evidence of the fact that essential oil of bitter almonds, when *pure*, does not possess poisonous properties.

The extreme difficulty of freeing the oil from the hydrocyanic acid by the usual process, seems to account for the contradictory results of former experiments, and when we reflect on the numerous fatal consequences attending the use of this article for domestic purposes, and the simplicity and economy of the above process, it becomes important that manufacturers of this article should give their attention to this subject, and endeavour to supply the public with a preparation at

once perfectly harmless, and still possessing the agreeable flavour for which it is so highly esteemed.

To the above, the editor subjoins the following article from a Manchester newspaper, proving the dangerous qualities of the *commercial article.*

"I was called professionally to a lady, labouring under symptoms which induced me to inquire into the diet taken on the preceding day, when a statement was made, proving that some custard of which she had partaken had acted poisonously, (though, happily, not fatally,) her symptoms having been such as are familiar to medical men, as the effect of an overdose of prussic acid. Bitter almonds in substance, and in the form of essence, likewise the kernels of stone fruit, contain this acid in different proportions, and this fact should be known, as it is much to be feared that these articles are used ignorantly with respect to their dangerous properties. In mentioning the case of my patient to a medical man, he informed me that a friend of his had had placed before him some custards, which seemed to be superimpregnated with bitter almonds. On questioning the cook, as to what she had used, she replied, "nothing but almond water, which is a harmless thing; I'd drink a bottlefull of it." "Would you?" replied the gentleman, "then bring me the liquid and the cat." On pouring a small quantity of the liquid into the animal's mouth, poor puss instantly expired. The object of this notice, then, is to caution druggists especially, against selling bitter almonds, or the preparations entitled essence of the same, without full and explicit *printed* directions as to the quantity which may be safely used (if the pampered palate require that they should be used at all), as adjuncts to custards, puddings, and such like articles of diet.—*Pharm. Journ.*, July 1847. T. R. B.

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76. *Ledoyen's Disinfecting Fluid.*—This article appears to be exciting considerable attention abroad. We gather from various journals, and particularly the *Pharmaceutical Journal*, for August, 1847, that M. Ledoyen, the discoverer, claims for it all the efficacy usually attributed to chloride of lime, as a disinfectant, without the disadvantage of causing the evolution of any deleterious compound, and that night soil or other refuse, might, by means of this fluid, be entirely deprived of its noxious odour, at the same time, that its properties as a manure would be rather improved than deteriorated. It was also described as being a certain specific against contagion, and an unexpensive compound, easily procurable.

M. Ledoyen refused to disclose his secret, on the ground that in doing so, he would deprive himself of the chance of any pecuniary advantage, although he at the same time offered to submit the liquid to experiment before any tribunal.

"M. Ledoyen, however, in conjunction with Col. Calvert, succeeded in introducing the fluid to the notice of the government; a parliamentary inquiry ensued, and a report was published. During the whole of these proceedings, the secret was kept so inviolate, that none of the fluid could be obtained, except on a promise that it should not be chemically examined, and we could not even obtain it from the Fever Hospital, where it had been in use for many weeks, because we declined to take the pledge. A small quantity, however, was recently furnished from another source without the pledge.

"It is now generally known that the fluid is a solution of nitrate of lead, which, like other salts of lead, decomposes sulphuretted hydrogen and hydrosulphate of ammonia, thus destroying the smell and producing innoxious compounds. That the salts of lead possess this property is known to every student in chemistry, and these salts are familiar to the profession as applications in the form of lotion and for other purposes. We have known Mr. Ure prescribe a solution of nitrate of lead as a lotion for foul ulcers two or three years ago.

"It therefore requires no further proof to establish the fact, that the salts of lead are adapted as decomposing agents, for neutralizing animal or vegetable effluvia, in which sulphuretted hydrogen is the active ingredient. But it remains to be proved that the fluid in question is a specific against the miasma of fever, which, in the opinion of some of our best chemical and medical authorities, is distinct from sulphuretted hydrogen, although generally a concomitant.

"On the supposition that sulphuretted hydrogen is the cause of fever, it might be expected that the students in a chemical laboratory, where the air is constantly

contaminated with the gas, would be particularly liable to febrile attacks. This, however, is not found to be the case.

"It appears that M. Ledoyen does not contemplate securing to himself by patent the exclusive right to sell his fluid, but claims from the government, such reward as may appear on investigation to be due to him, as the discoverer of a disinfecting agent of great importance to the health and welfare of mankind. A similar application was made to the French government, but the grant was refused."—*Pharm. Journ.*, August 1847. T. R. B.

ETHER INHALATION AS A MEANS OF ANNULLING PAIN.

The introduction of the inhalation of ether as a means of annulling pain, is the most interesting and perhaps important event in the medical history of our time. We had hoped, in the present number of this Journal, to have been enabled to give a full account of the effects of this agent, so as to furnish our readers with the data for determining its exact effects, its precise value as a means of annihilating pain, and to discriminate the cases to which it is applicable. Unhappily the materials for this do not as yet exist. On every point connected with this subject, much diversity of opinion exists, and even reports of experiments are so far at variance, that it is impossible to entirely reconcile them. Under these circumstances, all that we can do is to chronicle the principal facts which have been brought to light, and leave our readers to draw such deductions as they may feel that these imperfect materials authorize.

§ 1. *Mode of Administering Ether, and Precautions to be observed.*

Various and complex forms of apparatus have been contrived for administering ether vapour, but it seems now well settled that a simple flask, containing flannel, or some porous material saturated with ether, and with a hole in the side to admit atmospheric air, and a simple mouth-piece; or a piece of sponge saturated with ether and held over the mouth and nose, answers perfectly well.

77. The following rules are given by Dr. Ranking to be observed in its exhibition:—

1st. The ether employed should be the purest washed sulphuric ether.

2d. The patient should be allowed to respire atmospheric air alone for a few moments if the apparatus is so formed as to allow of it; if not, the nose should not be closed until several respirations have been taken, and the patient continues to breathe without trepidation.

3d. The ether should not be turned on in a full jet at once, but the stopcock should be so regulated as gradually to accustom the bronchial tubes to the vapour.

At this time coughing is apt to ensue, especially if the ether be not perfectly pure; this symptom, however, soon subsides, or can be moderated by a regulation of the jet of the ether.

4th. Surgeons differ in opinion as to the exact point at which inhalation should be suspended; we believe that for surgical purposes, Mr. Robinson's test, as afforded by the state of the eye, will be a sufficiently good guide.

5th. In prolonged operations, it is necessary to alternate respiration of pure atmospheric air with that of ether vapour; this is accomplished by removing the clip from the nose, or still better, in those instruments which are so made, by shutting off the ether and turning on the air.

78. The precautions which seem requisite are thus stated by Dr. Ranking:—

1st. Never to exhibit the ether vapour without having previously auscultated the heart and lungs.

2d. Never to employ it in persons who have signs of obstructive disease of the heart to any amount, or of dilatation of its cavities, or whose heart is feeble, even though not disproportioned.

3d. Never to employ it in persons who have any considerable portion of a lung unfitted for respiration, as from hepatization, tubercular deposit, pleural effusion, &c.

4th. In persons with short necks, with tendency to cerebral congestion, its employment is not without risk; also (perhaps) in those with disposition to insanity or other recurrent disease of cerebral origin.

5th. No operation of consequence should be performed under the influence of ether without a preliminary "trial" exhibition.—*Half-Yearly Abstract.*

§ 2. *Physiological Action of Ether.*

The most valuable of the recent experiments which have been made with a view of determining the physiological action of ether, are the following:—

79. *Experiments illustrating the Effects produced by the Inhalation of Ether upon the lower Vertebrate Animals.*—By Holmes Coote, Esq., and Thomas Taylor, Esq. (*Lancet*, June 19th, 1847.)

These experiments, eight in number, illustrate some of the principal phenomena which the respiration of air impregnated with the vapour of ether may produce upon the animal frame. A feeling of discomfort, indicated by a distressed look, glassy eye, and attempts to escape, is quickly followed by more rapid and more powerful contractions of the heart, by increased rapidity of circulation throughout the whole vascular system, by deeper and laborious, or by more frequent acts of inspiration, and an excited condition of the brain. Then the cerebral functions become oppressed; sensation and the power of motion become more and more impaired; the action of the limbs becomes irregular and wild, and the animal reeling and staggering from side to side, eventually falls down as if lifeless. But respiration still goes on; the capillary circulation is unusually active; and although the muscular system generally is in a state of relaxation, the involuntary muscles seem preternaturally excited; both the urine and the feces may be suddenly voided. This stage of complete insensibility is followed, after a time, by symptoms of congestion of the brain; the respiratory act becomes less frequent; the blood, of a dark blue colour, stagnates in the capillaries; the extremities feel cold; the lips are blue and livid; and if the animal be not speedily removed into pure air, respiration first stops—then the contractions of the heart become fainter and fainter—lastly, the peristaltic action of the intestinal tube ceases. Upon examining the bodies of those destroyed by the inhalation of ether, there is found great congestion of the vessels of the pia mater, and of the sinuses at the base of the brain; the vessels of the medulla oblongata and pons Varolii are especially turgid with dark-coloured blood; both sides of the heart are distended by fluid black blood. The air-sacs of a frog (exp. 1) were full of air; the lungs of the guinea-pig (exp. 6) were in a state of collapse.

The authors draw the following important practical inferences from their observations.

1. The vapour of ether, when inhaled continuously, and in considerable quantity, is capable of destroying life, by producing an accumulation of dark blood in the vessels at the base of the brain.

2. The commencement of this state is indicated by slow and laborious respiration—by failing pulse, cold extremities, and blue, livid lips.

3. The arterial blood is, under these circumstances, of the same dark colour as that contained in the veins.*

4. The slow circulation, or the stagnation, of such a fluid in the cerebral vessels may produce effects which the inspiration of pure air will be unable to rectify.

5. Great judgment, therefore, should be exercised in compelling patients struggling for pure air to inhale through the ether apparatus.

6. But a state of insensibility, produced by the proper influence of the ether, may be safely prolonged for a very considerable time, by permitting the occasional inhalation of pure air, and by re-administering the ether only when symptoms of consciousness are beginning to manifest themselves.

7. The involuntary muscles, so far from being in a state of relaxation, as are the voluntary muscles, seem to be preternaturally excited, and to act with increased power.

* During the performance of amputation of the forearm, upon a patient under the influence of ether, at St. Bartholomew's Hospital, in the month of March, it was observed that the blood, flowing from the radial, ulnar, and interosseous arteries, was of as dark a colour as that contained in the veins.

80. *Influence of Ether on Respiration.*—M. Ville, in conjunction with M. Blandin, has instituted some experiments on the influence of ether on respiration, and the results show that in that state of complete insensibility where the sight seems lost, where the limbs have lost heat, and, often, the power of motion, respiration develops more carbonic acid than in the opposite condition, where the play of the organs can go on freely and naturally. In the progress of etherization, the carbonic acid thrown off during respiration always augments in quantity in proportion as sensibility becomes enfeebled, and, on the contrary, diminishes as sensibility returns and is re-established.

The following are some of the results of the experiments:—

Carbonic acid produced during natural respiration.	During the state of insensibility.	Ether contained in the air inhaled.	Duration of inhalation.
No. 1—2·41	4·84	6·70	2 min. 30 seconds.
2—3·05	4·38	2·17	2 min. 30 seconds.
3—2·79	3·11	12	4 min.
4—1·36	3·32	12·68	4 min.
5—2·04	4·42	14·11	2 min. 30 seconds.

—*Lancet*, July 10, 1847.

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81. *Morbid Appearances.*—The morbid appearances which have been found after death, caused by ether in animals, are similar to those observed in asphyxia, namely, fluidity of the blood, its collection in the right side of the heart and large veins, and engorgement of the internal viscera. In the fatal case of the Royal Infirmary there was found double pneumonia, bronchitis, and secondary purulent deposits in the joints. In the case of Mr. Nunn, cerebral congestion, lungs engorged posteriorly, and uniform fluidity of the blood. In the case at Grantham there was no great congestion, but the blood was fluid throughout. The observations of Amussat and Lassaigne have shown that in every case the blood loses its power of coagulation, although, with the exception of the presence of a minute dose of ether, its chemical principles are unchanged.—*Monthly Journ. Med. Sci.*, April 1847.

Some further information regarding the physiological action of ether is furnished in the next section.

§ 3. *Employment of Inhalation of Ether in Surgical Practice.*

It is impossible to chronicle all the individual cases, so numerous are they, in which inhalation of ether has been successfully employed to annul pain in surgical practice. They embrace almost every operation in surgery; and what is most extraordinary is, that an agent so potent should have been administered in such numerous instances, and so few examples be recorded of injurious results. It may be useful, however, to show that it is not always effectual, and that sometimes very distressing consequences follow its use. This is the more important, because, from the tone of some journalists, we have reason to believe that many have been misled on this point.

The following case is well calculated to induce caution in its use:—

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82. *Ill Effects of Ether.*—Mr. Copeman relates, in the *Provincial Medical and Surgical Journal* (February 10th), the following case, in which very distressing effects resulted from the inhalation of ether.

"The experimenter was a medical gentleman, who requested me to extract a tooth for him, provided he could make himself insensible to pain by means of ether. He breathed the vapour for several minutes without any apparent effect, but soon afterwards thrust the apparatus *suddenly* from him, exclaimed that he could bear it no longer, staggered about the room, and was assisted to a chair. His breathing became very difficult; his arms were stretched out; his fingers extended; and he was perfectly cataleptic. I would then have attempted to draw his tooth, but he showed some resistance, and his breathing was so exceedingly laboured, that it would have been almost impossible to perform that or any other operation. Each expiration was accompanied with a loud *Hah!* his eyelids were closed; his head was hot; pupils not altered; conjunctivæ much injected; pulse 120; and his appearance altogether was so distressing as to excite great alarm in the minds of the bystanders.

I applied cold to the head; gave some brandy and water, for his hands were cold; and admitted fresh air freely into the room. Soon the cataleptic symptoms disappeared, and were succeeded by severe hysteria, with about the same degree of consciousness as is usual in that disease. With some difficulty I led him to the outer door, when he exclaimed "Cover my chest," "cold, cold, cold." He was then removed to the sofa, when he was seized with severe cramp in the legs, the difficult breathing still continuing. I gave more brandy and water; applied hot flannels to the feet, and cold water to the head; admitted fresh air freely, and watched the progress of the case with no little anxiety; for these distressing symptoms continued for *more than an hour*, during which time I had to contend against the most fearful apprehensions of the mother, as well as to administer relief to a near relative who had voluntarily taken a poison, the effects of which I had not before witnessed, and the probable result of which I could not from experience determine. At last a few deep inspirations ushered in a state of semi-consciousness, the patient raised himself to a sitting posture, and looked about him with a vacant stare, the conjunctivæ being very red and suffused. He attempted to rise, but tottered like a drunken man, and suffered a degree of exhaustion and giddiness which lasted until he was taken to bed. He slept well, but next morning complained still of languor. I should mention, that while he was lying on the sofa I applied strong ammonia to his nose, without producing any visible effect, and he had afterwards no recollection of the circumstance.

"The description afterwards given by the patient of his sensations whilst under the influence of the ether, was as follows:—He felt nothing for several minutes, but on a sudden appeared to lose all muscular power. He seemed to take leave of the external world, but experienced a dreadful sensation of universal tremor, and yet a perfect fixedness of the limbs. He felt irresistibly disposed to lie down, and get his head upon the ground; was much distressed with a sensation of cold; also of tightness across the chest; and although he seemed to be aware that persons were talking to him, had no consciousness of what was really passing around him. He said his sensations were so dreadful that he would rather undergo any amount of pain than submit to the same again, which he could compare only to a state of utter helplessness and impending dissolution.

"The impression on my own mind was, that I would on no account willingly produce a similar train of symptoms; and that, if such were to be the *frequent* effects of the ether, there would be few who would wish to exchange for them the pain of a surgical operation.

"The apparatus employed was a glass jar, with openings at the top, into one of which was inverted a flexible tube for inhalation; and into the other a funnel, containing a piece of sponge, saturated with ether. About an ounce of ether, and several pieces of sponge, were in the jar. The patient was 23 years of age, spare, and of nervous temperament, with a brain very active and excitable. The time at which the inhalation was performed was soon after dinner; I presume, therefore, that neither was the constitution of the patient suited to the exhibition of ether, nor the time for the performance of the operation judiciously chosen. Certain I am, that it would have been extremely difficult to perform any operation requiring steadiness or delicacy in its execution during the presence of such symptoms as were produced in this instance by the inhalation.

"It is clear that great judgment is required in the selection of cases, and that the inhalation of ether ought on no account to be practised by any but competent medical practitioners. The object for which it is employed is so desirable, that in all probability it will become general in the profession; but in order to be useful, *it must be safe*, and I trust the above narrative will prove, as it is intended to be, a warning against the indiscriminate employment of a powerful agent, which, in incompetent hands, or under unfavourable circumstances, is capable of producing very disagreeable if not *dangerous* effects."

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83. *Injurious Effects of the Inhalation of Æther.* In a letter from Dr. Pickford.—Sir: Through the medium of the daily press, the public have been made acquainted with the powerful efficacy of the vapour of ether in annihilating suffering during surgical operations. The question of the possibility of any ill effects to the general health arising from so subtile an agent has not been mooted; and, with the

startling exception of an occasional coroner's inquest on the bodies of those who have died after operations performed during the state of insensibility consequent upon the use of ether, the public have neither read nor heard of any other than the most triumphant success of this new remedy. They have been taught to expect from its administration perfect immunity from pain and suffering of all kind, without fear of after consequences.

On this latter point, through the medium of the same channel, the columns of the daily press, I would undeceive the public mind.

We are told, that in the majority of cases, after inhaling the vapour for three or four minutes, a state of absolute unconsciousness, a corpse-like condition, is induced, during which the most severe and painful operations may be performed without the patient evincing the slightest evidence of sensation,—that the patient wakes, as it were, from a "pleasant dream," and feels no inconvenience whatever from the inhalation. This is, I fear, the bright side of the picture; it is, at least, a proposition from which I dissent.

Let us inquire what is the condition of the pulse, of the respiration and countenance during the state of insensibility, and on what these conditions depend.

The circulation at first becomes rapid, then slow and feeble; the respiration, bearing a due relation to the frequency of the pulse, becomes laboured and stertorous, the countenance is livid, the lips and tongue are blue, the pupils are dilated, the muscles universally relaxed, the functions of the brain and nervous system are suspended, sensation is annihilated, and the patient, to all intents and purposes, for the time being, is a senseless corpse.

It has been said by M. Roux and others, that this state bears a close analogy to drunkenness; by Baron Flourens, that it resembles asphyxia, and by others it has been likened to apoplexy of the congestive form. These are fallacies which I am prepared to dispute. Etherization, as it has been termed, has nothing in common with drunkenness, with asphyxia, with apoplexy, save the state of insensibility; but it has something far more alarming and dangerous than any or all of these conditions taken severally or collectively.

As a general principle, it is acknowledged that no agent, be it what it may, which produces a sudden and violent effect, can be safely employed. In the particular cases before us we have to contend, not only with sudden and overwhelming effects, but, what is far more important, with a chemical and vital alteration in the constitution of the blood itself, of which the state of insensibility is but the natural consequence.

The change which the blood undergoes in respiration is almost entirely confined to the blood corpuscles. These, which represent in their independent act of metamorphosis the real vitality of the blood, and from which its fibrin is formed, indispensably require for their healthy change a due supply of oxygen. If this supply be lessened or altogether cut off, their metamorphosis is imperfectly effected, or entirely suspended, and the amount and plasticity of the fibrin are proportionably diminished or altogether arrested.

The blood, robbed by the ether of its oxygen, impoverished by the solution by the same agent of myriads of corpuscles, of those especially with which it comes into immediate contact, depreciated as a consequence in the quantity and deteriorated in the quality of its fibrin, intensely blackened by the solution of its corpuscles and their contained hæmatoglobulin, is chemically deprived, to a considerable extent, of its powers of coagulation, and rendered unfit for the purposes of life. A black vitiated blood circulates through the system, analogous, in many particulars, to that in putrid and malignant fevers.

This impaired condition of the blood is not even partially corrected until respiration of atmospheric air has been permitted for some considerable time, and until lymph corpuscles have found their way into the circulation to replace those of the blood destroyed by the ether. Many persons, especially those who are out of health or enfeebled by long previous disease, are hours, days, nay weeks, recovering from the state induced by the inhalation; many die from its direct effects,—from the want of oxygenized and vitalized blood to stimulate healthfully the brain and nervous system.

With a view to counteract some of the ill consequences of etherization, it has been proposed that the patient should inhale oxygen gas "as *an antidote.*" This,

of necessity, presupposes the exhibition of a *poison*. So that a patient about to undergo operation is to inhale a poison, be subjected to its deleterious effects, and then to swallow an antidote, as though the operation were not of itself sufficient, without all this extra complication of poison and antidotes, suspended animation, or actual death, proximate or remote.

But what are the facts? Etherized blood cannot be reddened by oxygen gas, simply because its black red colour is not dependent alone on a chemical change in the hæmatin. The ether has also dissolved the blood corpuscles, and thus permitted the escape of the contained hæmatoglobulin; and these it cannot restore. Had the blood been merely rendered artificially venous by the absorption of its oxygen, or by cutting off its ordinary supply, its arterial colour would be restored by agitating it with oxygen. In the following experiment, these facts are pretty clearly established.

In each of two vessels I caught eight and a half ounces, by weight, of arterial blood; both vessels were instantly plunged in water at a temperature of 98° Fahr.; the blood in one vessel was exposed for three minutes to the influence of the vapor of ether. The blood became of an intensely black red colour, whilst coagulation was, to a very considerable extent, interrupted. Subsequently oxygen gas was diffused through the etherized blood; but no restoration of colour could be produced. Placed in the field of a powerful microscope, numerous flocculi, the remains of the capsules of the corpuscles, were observed floating in the fluid portion of the blood, which was rich with these remains. At the expiration of 72 hours the blood in both vessels was weighed—that which had been subjected to the vapour of ether yielded *five and a half* ounces of black red *fluid*, and three ounces of a stringy *clot*, conclusive evidence of the small amount of fibrin. The fluid portion of the blood (serum) in the other vessel, in which neither flocculi nor corpuscles could be detected under the microscope, weighed half an ounce, the *clot eight ounces*.

This indisposition of the blood to coagulate after the inhalation of ether offers another very serious consideration. Fatal hemorrhages must occur, and do occur; and as the whole circulating fluid is deteriorated by the ether, is it matter of surprise that the lips of wounds evert, that the discharge is unhealthy, that stumps become flabby or gangrenous, and that patients sink and die?

Etherization, it is to be feared, exerts also a baneful influence directly upon the respiratory organs. A medical friend in Dublin informed me recently, that of thirty fatal cases following operations in which ether had been employed in the various hospitals of that city, eight were found to be the subjects of recent tubercles of the lungs, the undoubted product, it was believed, of inhalation.*

The endeavour to alleviate human suffering under one of the most trying of all situations, the knife of the surgeon, is highly praiseworthy, and the public must feel deeply indebted to those medical gentlemen who have devoted their time and talents in the attempt to achieve so desirable an end. It becomes us, however, to ascertain, so far as we are able, whether the means employed are compatible with the health and lives of those about to undergo operations.

Pain during operations is, in the majority of cases, even desirable; its prevention or annihilation is, for the most part, hazardous to the patient. In the lying-in chamber nothing is more true than this: pain is the mother's safety, its absence her destruction. Yet are there those bold enough to administer the vapour of ether even at this critical juncture, forgetting it has been ordered that "in sorrow shall she bring forth." I have the honour to be, sir, your obedient humble servant,

JAMES H. PICKFORD, M. D.

1 CAVENDISH PLACE, *Brighton*, 29th May, 1847.

Edinburgh Med. and Surg. Journal, July, 1847.

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84. *Injurious Effects of Ether Inhalation.*—The Editor of the *Monthly Journal of Medical Sciences*, (number for April, 1847,) states, "that inconvenient effects have frequently resulted from the inhalation. Many of these will be found related by Professor Syme and Dr. Roberts, in our report of the meetings of the Medico-

* Mr. Macdonnell asserts (*Prov. Med. and Surg. Journ.*, July 14) that this statement is altogether groundless.

Chirurgical Society of Edinburgh. Great excitement, cough with expectoration of pus, hemoptysis, and convulsions, during the inhalation, have been witnessed by ourselves. In some cases, erotic feelings, and even nymphomania, have been occasioned in females, in others hysterical symptoms, or those of depression or intense headache, which have continued several days. In our last number we noticed the occasional occurrence of alarming sinking, which required vigorous measures to restore the individual. In some cases, the individuals have been thrown into such a state of agitation as to render the performance of the operation impossible.

Fatal effects have become multiplied. In our last number, one fatal case was noticed, occurring in the Edinburgh Royal Infirmary. We are informed that there are just now two other cases in which the ether was given, dying of secondary purulent deposits in the same institution.* Is this result the effect of ether? An answer in the affirmative cannot be decidedly given, but, as we previously stated, all such cases require to be put on record. M. Jobert has brought forward two cases in which he considered death to be partly dependent on the ether. M. Roux has given another of tetanus, in which the patient never rallied from the stupefaction, and where death was decidedly accelerated by it. Mr. Nunn, of Colchester, has recorded a case of lithotomy, which sank without the patient having rallied from the operation; and Dr. Maclagan has mentioned another, occurring in London after amputation of the thigh.

We observe in the Times, an account of an inquest at Grantham, in the County of Lincoln, in a case where an osteo-sarcomatous tumour was removed by Mr. Robbs, surgeon, under the influence of ether. The patient never rallied from the operation, which was in no way severe or prolonged, and the jury found "that the deceased, Ann Parkinson, died from the effects of the vapour of ether, inhaled by her for the purpose of alleviating pain during the removal of a tumour from her left thigh, and not from the effect of the operation, or from any other cause." In the correctness of this verdict the surgeon himself, Mr. Robbs, concurred.

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85. *Ether Inhalation in Tetanus.*—Dr. W. H. Ranking, of Norwich, relates, in the *Prov. Med. and Surg. Journ.*, April 21st, a case of traumatic tetanus, in which he tried the ether inhalation, and with injurious effects. The first inhalation aggravated the spasm in a tenfold degree; the body of the patient became perfectly opisthotonic; foam issued from the mouth, and the man presented a most frightful spectacle. After allowing the effects to subside, it was again had recourse to, with a recurrence of the same symptoms.

In a case in which this remedy was tried in France, death was unquestionably hastened by it.

Two cases are also recorded, one by Dr. Brady (*Dublin Medical Press*), and the other by Mr. Broughton (*Prov. Med. Journ.*, May 5th), in both of which ether inhalation was tried, without at least averting a fatal result. Two cases are also recorded in which it is said to have cured the disease, the first by M. Petrusco (*Clinique de Marseilles*), is by no means satisfactory; the second, by Mr. Hawksworth, is scarcely more so, having been reported in an English newspaper, from which it is copied into the *Prov. Med. and Surg. Journ.*, May 19th.

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§ 4. *Inhalation of Ether in Obstetrical Practice.*

86. The applicability of ether vapour to Midwifery practice, is a question very difficult to decide from the many circumstances which must be taken into account. Dr. Ranking, in his Abstract, has well stated these difficulties.

"Many circumstances," he says, "conspire to render the application of ethereal vapour to the purpose of annihilating the pangs of childbirth the most interesting feature in the history of the discovery; but at the same time, from the number of points to be taken into consideration, in a process so complex as that of parturition, it is, of all the applications of the agent, that concerning which it is the most difficult to arrive at satisfactory conclusions. We have not to determine merely whether the inhalation of ether is capable of suppressing the pain which accompanies parturition, but we have to take note also of other conditions which com-

* One of these has since expired.

plicate the problem. The action of ether upon the fœtus, and upon the general economy of the mother; whether the insensibility which paralyzed the voluntary muscles would not likewise abolish the contractility of the uterus and abdominal muscles—were all so many novel questions which it was necessary to elucidate. It required, we think, no small courage to take the first step in solving a problem so important; a problem in which to err would not have been to commit a mere physiological blunder, but, in point of fact, to sacrifice the two lives, the preservation of which was confided to our care. It would be premature at the present time, to make any decided observations as to the general applicability of ether to midwifery."

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87. *Application of Ether to Obstetric Practice.*—Prof. Simpson, of Edinburgh, was, we believe, the first to test the application of ethereal inhalation to produce insensibility to the pangs of labour. In the *Monthly Journal of Medical Science*, for March last, he has published an account of some of his early trials, and the views he entertained relative to the use of this agent. In this paper he observes:—

"In obstetric as in surgical practice, the degree of insensibility produced by etherization, and its accompanying phenomena, differ much in different instances. In some, a state of total apathy and insensibility seems to be produced; others move about and complain more or less loudly during the uterine contractions, though afterwards, when restored to their state of common consciousness, they have no recollection of any suffering whatever, or, indeed, of anything that had occurred during the inhalation and action of the ether; others again, remain quite aware and conscious of what is going on around them, and watch the recurrence of the uterine contractions, but feel indifferent to their effects, and not in any degree distressed by their presence; and in another class again, the attendant suffering is merely more or less diminished and obtunded, without being perfectly cancelled and annulled.

"On the evening of the 13th inst., in two cases that rapidly followed each other, I witnessed, in the above respect, two very different conditions induced by the use of the ether. The patients (who each had borne several children previously) were both placed under the influence of it just as the os uteri became fully opened, and in neither did the full expulsion of the infant through the pelvic passages require above twelve or fifteen minutes. My first patient (the wife of a clergyman) subsequently stated, that she knew all that was said and done about her, was aware of the pains being present, but felt no distress from any of them till the supervention of the last strong contraction which drove the head out of the vulva, and the feeling then seemed to partake of the character of strong pressure, rather than of actual pain. Subsequently she told me, she could only look back with regret to the apparently unnecessary suffering she had endured in the birth of her former infants. The second patient, a lady of a timid temperament, and very apprehensive about the result of her present confinement, was induced with difficulty to inhale the ether vapour; but it speedily affected her when once she did begin. In two or three minutes she pushed the apparatus from her mouth, talked excitedly to a female relative present, but was immediately induced to recommence the inhalation; and subsequently, according to her own statement, 'wakened out of a dream, and unexpectedly found her child born.' Like many others, she thought hours instead of minutes had elapsed, from the commencement of the inhalation to the period of the complete restoration of consciousness. Making apparently an effort of memory, she afterwards inquired if she had not once awakened out of her dreamy state, and spoken some nonsense to her friend.

"A careful collection of cautious and accurate observations will no doubt be required, before the inhalation of sulphuric ether is adopted to any great extent in the practice of midwifery. It will be necessary to ascertain its precise effects, both upon the action of the uterus, and of the assistant abdominal muscles; its influence, if any, upon the child; whether it gives a tendency to hemorrhage or other complications; the contra-indications peculiar to its use; the most certain modes of exhibiting it; the length of time it may be employed, &c.* In no

* I have, during labour, kept patients under its influence for upwards of half an hour. In exhibiting it, the first, or exhilarating stage of its effects should be passed

case have I observed any harm whatever to either mother or infant, follow upon its employment. And, on the other hand, I have the strongest assurance and conviction, that I have already seen no small amount of maternal suffering and agony saved by its application. The cases I have detailed sufficiently show its value and safety in cases of operative midwifery. And here, as in surgery, its utility is certainly not confined to the mere suspension and abrogation of conscious pain, great as, by itself, such a boon would doubtless be. But in modifying and obliterating the state of conscious pain, the nervous *shock* otherwise liable to be produced by such pain, particularly whenever it is extreme, and intensely waited for and endured, is saved to the constitution; and thus an escape gained from many evil consequences that are too apt to follow in its train. Granting that experience will yet be able to prove its safety and efficacy in modifying and annulling the pains of labour, will (I have repeatedly heard the question asked) the state of etherization ever come to be generally employed with the simple object of assuaging the pains of *natural* parturition? Or (as the problem has not unfrequently been put to me) would we be 'justified' in using it for such a purpose?

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"Now, if experience betime goes fully to prove to us the safety with which ether may, under proper precautions and management, be employed in the course of parturition, then, looking to the facts of the case, and considering the actual amount of pain usually endured (as shown in the above descriptions of Merriman, Naegele, and others),* I believe that the question will require to be quite changed in its character. For, instead of determining in relation to it whether we shall be 'justified' in using this agent under the circumstances named, it will become, on the other hand, necessary to determine whether on any grounds, moral or medical, a professional man could deem himself 'justified' in withholding, and *not* using any such safe means (as we at present presuppose this to be), provided he had the power by it of assuaging the agonies of the last stage of natural labour, and thus counteracting what Velpeau describes as 'those piercing cries, that agitation so lively, those excessive efforts, those inexpressible agonies, and those pains apparently intolerable,'† which accompany the termination of natural parturition in the human mother."

This is a very favourable estimate of ether inhalation, but it must be borne in mind that it was derived from a limited experience, the paper bearing the date of February last; what are the present views of the author we do not know, as we have not seen any communication from him giving the results of his further experience, except the following:—

88. *Ether Inhalation in Midwifery Practice.*—Dr. Simpson has lately ascertained two important points with regard to the use of ether in midwifery. First, its action may be kept up for hours. In one case he had a patient placed for four, and in another for five hours and a half, under its influence before the child was born. When the patients awoke, about thirty or forty minutes after delivery, they were quite unconscious of the birth of their infants, and could scarcely at first be persuaded of the happy result. Both labours had been previously exceedingly tedious. One of the patients had the child's head arrested at the brim, and after being above thirty-six hours in labour, was delivered by Dr. S. with the long forceps. Second, the fœtus in utero seems not to be deleteriously affected by even such prolonged etherization of the mother. In these two cases the action of the fœtal heart was carefully watched by Dr. S. with the stethoscope, and did not vary above

through as rapidly as possible, and the patient never allowed to be excited or irritated by the nurse or others. I have heard its use strenuously denounced on the ground that its effects, though good, are still of an intoxicating character. But on the same ground, the use of opium, &c. &c., in medicine, to relieve pain, and procure sleep, should be equally reprobated and discarded.

* Dr. Rigby, in his System of Midwifery, p. 103, observes, "This is the moment of greatest pain, and the patient is quite wild and frantic with suffering; it approaches to a species of insanity," &c.

† Traité des Accouchemens, vol. i. p. 449. "Ces cris percans, cette agitation si vive, ces efforts excessifs, ces angoisses inexprimables, ces douleurs qui parassaient intolerables," &c.

ten or fifteen beats during the whole time of the etherization. Both children were born alive and well.—*Monthly Journ. Med. Sci.*, April 1847.

89. *Inhalation of Ether in Midwifery Practice.*—Baron Paul Dubois read to the Academy of Medicine, of Paris, on the 23d of Feburary last, a very interesting memoir on the "Inhalation of ether applied to cases of midwifery." The following are the conclusions which his observations justify him, he says, to draw, and his well known circumspection and good judgment invest these deductions with great authority.

"1st. That the inhalation of ether has the power of preventing pain during obstetric operations.

"2d. That it may also momentarily suspend the natural pains of labour.

"3d. That the state of ebriety induced by the inhalation of ether, does not suspend uterine contraction when the latter is decidedly set in and takes place at short intervals; and that it does not impede the synergetic action of the abdominal muscles.

"4th. That the state of ebriety appears to lessen the natural resistance which the perineal muscles oppose to the expulsion of the head.

"5th. That the inhalation of ether has not appeared to exert any bad influence over the life or health of the child.

"Now, after hearing the foregoing conclusions, it may appear natural to suppose that the inhalation of ether being a process to which so many advantages are inherent, it might hence be considered as a precious expedient, and be frequently resorted to by the obstetric art. Such, however, is not my opinion. The very proposal of such a thing, having no other ground but the very few facts I have communicated to the Academy, would not only appear very bold, but should be considered as extremely imprudent. In beginning this communication I related the apprehension under which I laboured at first. Well, the cases I have brought before the Academy may have lessened my fears, but have not yet altogether erased them from my mind.

"You will remember that one of the women who inhaled ether went into a state bordering on that we design under the name of epileptiform. Two other women have died. Now, although the morbid occurrences in the first cases were but of a short duration—although the fatal result in the two other cases rose far more probably from the influence of the epidemic than from any other cause—the Academy must feel that, in a question of so serious a nature, the recollection of these facts must still leave on my mind impressions of doubt and timidity. Later, perhaps, these hesitations may disappear; but even then I shall not forbear thinking that the very nature of things will tend to render very uncommon the adhibition of ether in cases of midwifery. First of all, it is evident that inhalation of ether can never produce a painless labour from beginning to end; it is to be doubted whether insensibility could be made to last long enough for such a result; and it is more doubtful still whether such a thing could be tried without running positive danger, and without being liable to the charge of guilty temerity. Therefore, there only remains for employing ether but the last period of labour, as in the cases where I have used it; and even then, this last period where its adhibition has appeared the most effectual, is the one, according to all mothers, the least fatiguing, the least painful of the whole labour.

"As to the use of ether during obstetric operations, I will only observe that these operations are often rendered necessary by unforeseen circumstances, and that when it thus happens, they are of a very urgent nature. It is not necessary to give further development to the proposition I lay down here, in order to show that in a great number of these cases inhalation of ether cannot be resorted to. As to the remaining cases, it may be asked whether they prove to be generally of such a painful nature as to justify the common use of a process, which even, in conditions unconnected with the puerperal state, is not free from disadvantages, and which, when used under those special conditions, seems to me still less free from the same charge. My profound feeling on the subject is, that inhalation of ether in midwifery should be restrained to a very limited number of cases, the nature of which ulterior experience will better allow us to determine."—*Lancet*, March 6th, 1847.

90. *On the Employment of Ethereal Inhalation in Midwifery.* By Prof. Siebold.—At a meeting of the Royal Scientific Association of Göttingen, held on the 8th of May, 1847, a paper was read by Professor Siebold, "On the Employment of the Vapour of Sulphuric Ether in Midwifery," of which the following is an abstract:—

The principal questions which had occupied the author's attention in the investigation of this subject, were—

1st. Whether this new remedy may be employed in natural cases of labour, for the purpose of preventing the severe pains attendant on the latter part of the process of delivery, or

2dly. Whether the use of it is to be limited to cases of operative midwifery.

It must be remarked, in the first place, that, when labour pains are of long continuance, it may be regarded only as common prudence to mitigate or remove those pains which are strongest and most violent—those, namely, which by the schools are called "dolores conquassantes," and under the influence of which the child's head is pressed through the external genital parts, and is then followed by the trunk. The important moment, then, in which the employment of ether should be resorted to, provided its use in a natural case of labour be decided upon, is that in which the head lies immediately behind the external parts of generation, or has already progressed so far outwards that it becomes evident that at the next pain it will be born.

But, in judging of the admissibility of this new remedy in natural cases of labour in general, the nature of the pains attendant on the process must be especially taken into consideration. These pains are natural phenomena, produced by contraction of the uterus for the purpose of expelling the child. They are endured, therefore, without any detriment, and, even the most severe ones, disappear at once, as if by a charm, directly the child is born. This cannot be said, however, of those pains which are produced by the knife of the surgeon: they, of course, are unpleasant additions to the looked-for effects of an operation, and do not lead, like labour-pains, to a certain desirable result. Unlike labour pains, also, they are, from their first occurrence, of the utmost severity, and are therefore not rendered tolerable to the system, as the former are, by a gradual increase in their severity: they are surgical pains, brought into existence by the hand; whilst labour-pains appear to be intimately connected with the whole process of the wonderful act of parturition, and may, therefore, in contra-distinction to surgical pains, be called *physical* pains.

There is, however, a second kind of pains to which parturient women are subject: these are inflicted from without, and have nothing in common with the real process of labour, but are produced by the hand or instrument of the midwife in cases where an operation is necessary. As the surgeon, so also does the operating midwife, produce pain; and, indeed the parturient woman then suffers doubly, for the ordinary labour-pains continue, and to these are added the sufferings resulting from the operation. The consequences of this often manifest themselves for a considerable time afterwards, and much suffering is thus entailed, in consequence of the great pain inflicted during the operation. For this reason, therefore, must a remedy which promises to relieve or entirely remove these pains, be welcomed in operative midwifery; and even if theory cannot unconditionally speak in favour of the employment of ether in cases of natural labour, yet this offers no tenable argument against the use of this remedy in those cases of labour requiring an operation, providing the employment of it is not attended with any ill effects which would interfere with the performance or the object of the operation.

Several points on this subject require experience for their elucidation—such as whether the female organism can endure without detriment the employment of ether during labour,—whether the efficiency of the pains will not be interfered with,—and, lastly, whether the child suffers any harm. With the view of procuring information on these points, the author has instituted a number of experiments in the Lying-in-Hospital under his charge, and, in his present essay, communicates the results to the Society.

He experimented, in the first place, on healthy non-pregnant women, in order to ascertain the effect of this remedy on the female system. In all the subjects, the effects of ether vapour were duly manifested, sensation and consciousness being more or less suspended. The description of the sensations perceived by

the patients certainly varied; yet they all agreed in their relation of the pleasant and agreeable condition in which they found themselves. In each individual, the same phenomena which were observed the first time were perceived in each subsequent repetition of etherization. In this, the action of ether resembles the effects of intoxication from spirituous liquors.

Experiments were then performed on pregnant women; and during these, attention was especially directed to the effects produced on the child in the uterus. As unconsciousness began to appear, the child seemed uneasy, for its movements increased; but it became quiet again when the stupor of the parent was complete. The action of the child's heart, however, was found to continue quite unaltered, not the slightest change in its frequency and regularity being detected.

After this, the remedy was tried in eight cases of labour. In all of them a greater or less degree of unconsciousness was produced by it; but, with the occurrence of the narcotism, the labour-pains at once ceased, even in cases where but a short time before they had been of the strongest kind. In some the pains returned only with returning consciousness; but in others they were re-excited, during the continuance of the narcotism, by friction over the abdomen. Signs of pain were indeed manifested during the expulsion of the child; yet afterwards there was either no remembrance at all of them, or only a very slight one. No injury was observed to result either to mother or child; for although one child was born in a state of death-like stupor, yet this was not the fault of the ether, for the umbilical cord was found firmly twisted around its neck.

Although the results of the employment of this new remedy in natural cases of labour was therefore not very satisfactory, yet the advantages afforded by it in those cases which required an operation were very manifest. The first case of this kind in which the remedy was tried, was that of a young primipara, in whom extraction of the child by the feet was rendered necessary. The pains endured by this patient were very sincere: she tossed about the bed, screamed aloud, and, by the continual movements of her whole body, rendered even an ordinary examination difficult. But, when brought under the influence of the vapour of ether, she speedily fell into a state of unconsciousness, during which the extraction of the child was effected with ease. She remained perfectly quiet, and a few groans during the operation were the only manifestations of pain which she evinced. Through the irritation which the extraction of the child excited in the uterus, this organ was thrown into contraction, and thus aided the operation. The child made the necessary turns, the arms appeared of themselves, and the head shortly afterwards was born. In about two minutes after the birth of a living child, the woman roused up: she appeared astonished; and, on seeing her child, exclaimed—"Oh, it is all over!—without this I could not have endured it." When further questioned, she said she felt as if in a dream, and fancied she was in her native place, and strolling among trees in blossom. She had no recollection of pain. The case progressed favourably, and terminated well.

Equally successful were the results of two forceps-operations performed while the patients were under the influence of ether. In both cases, indeed, the commencement of unconsciousness was accompanied by cessation of the labour-pains, but in each they were re-excited by the introduction and use of the instruments, and thus aided the operation. The application of the forceps was in both cases unaccompanied by pain, and it was only during traction that any signs of suffering were manifested. When roused from their stupor, the patients possessed no recollection of what had happened to them, and expressed amazement at their labour being over. The children, in both instances, lived. It is deserving of especial notice, that in both the operations, the parts of generation, the vagina and os uteri, were rendered so soft and lax by the narcotism, that the introduction of the blades of the forceps could be effected with the greatest ease. In neither case did any evil consequences result: in one of them, indeed, such effective pains ensued shortly after delivery, that the placenta was spontaneously expelled. The softness and relaxation of parts in these cases lead to the suggestion that in those cases in which strong contraction of the uterus offers considerable difficulty in the performance of a requisite operation—as in cases of turning, or of incarcerated placenta—the vapour of ether may render very efficient service.

If from the above observations it be permitted to come to a decision in regard

to the use of this new remedy, and to answer the two questions stated at the outset, one might, in the first place, give expression to the opinion of the author by saying that this remedy will find no particular favour in cases of natural labour. For, suspension of labour-pains, or cessation of uterine contraction, is the usual consequence of the employment of the remedy, and the natural process of labour will, therefore, obviously, be interrupted by it. It is even possible that through the cessation of the efforts of uterine contraction, the occurrence of hemorrhage will be induced, and thus a troublesome and dangerous addition be made to the more ordinary risks of labour. The employment of ethereal vapour in natural labour will, therefore, probably be limited to those cases in which pains of remarkable severity occur.

There is yet one other remark to be made, supposing it be determined to use the vapour of ether in cases of natural labour:—may this remedy be placed in the hands of midwives?—the law has already given the proper answer to this question in the case of inferior surgeons and dentists; it has prohibited these from the employment of this remedy except with the concurrence of a physician. Yet the subject is of still higher importance in regard to midwives, but no enactment of a like nature has yet appeared to regulate the employment of this remedy in this its hitherto almost unknown, and but little practised application.

In answer to the second question stated at the commencement, it may be said that the true use of the vapour of ether in midwifery is limited to cases requiring operation; experience from all sides has spoken in favour of its employment in such cases. Here we have to deal with pains which are inflicted from without, and the removal of which, by the use of ether, is a great gain; and that they may be removed experience has shown: it has shown also that neither the mother nor the child is any the worse from the employment of this remedy, but, on the contrary, that the operation is rendered easier of performance by the softening and relaxation of the parts which are induced. The fear lest contractions of the uterus should entirely cease is also groundless, for the irritation which is excited in the uterus by the operation is sufficient to cause a renewal of its action. The temporary interruption of the contractions is, indeed, of considerable service to the operator; for the operation of turning is often rendered very difficult by these contractions, since, the liquor amnii having escaped, the uterus is firmly clasped around the child, and thus considerable obstruction is offered to the passage of the hand to the child's feet. But in such cases much is to be hoped for from the use of ether; and an operation which, under ordinary conditions, is difficult, will be thereby much facilitated. Like good effects will probably also result from the use of this remedy in cases when the placenta is retained after the birth of the child; but for the determination of this, experience is required. It may be necessary, however, to mention that this remedy must be employed with great caution, and with due regard to all contra-indications; among which should be included a diseased state of the lungs, and a plethoric condition of the system, which latter might be apt to lead to apoplexy. Moreover the remedy should not be employed in cases where there is a tendency to hemorrhage, and in which such tendency has manifested itself in previous labours; for by the use of it, the best guard against hemorrhage, namely, uterine contraction, is withdrawn; and, indeed, we require further observation to show us whether even a more serious kind of hemorrhage may not be induced by the inhalation of ethereal vapour.* All this shows that further observations are required before a right judgment can be formed regarding the circumstances under which this remedy may be employed even in cases of operative midwifery.

With regard to the observations which have been offered by others on this subject, the chief ones are noticed by the author: among others, those of Dr. Simpson, (the first who employed this remedy in a case of midwifery requiring operation,) of the German physician, Dr. Hammer, of Mannheim, and of the French physicians, Paul Dubois and Bouvier.—*Lond. Med. Gaz*, June 1847.

* [The tendency which etherealized blood manifests to remain fluid after death renders it probable that the above-expressed fear will be found to be far from groundless.]

91. *Influence of Ethereal Inhalation on the Uterine Contractions.*—Notwithstanding the remarkable results obtained by MM. Paul Dubois, and Simpson, one important point with regard to the exhibition of ethereal inhalation in obstetrics has not yet been set at rest, viz.:—has ether the effect, as supposed by M. Velpeau, of suspending or diminishing the power of the uterine contractions so far as to facilitate certain obstetrical operations, such as the version of the fœtus. The following fact will further confirm the experience which we have already acquired, viz., that etherization neither suspends nor diminishes the resistance offered by the uterus to the introduction of the hand, and therefore does not facilitate version.

M. Stoltz, of Strasbourg, was called to a primipara, æt. 24, of strong constitution, and in the sixth month of pregnancy. She received a fall on the first of March, and after suffering somewhat from pain in the abdomen and sacral region, she was taken in labour on the 5th of the same month. On examination, M. S. found the right foot and right arm at the uterine orifice: from the shape of the uterus, it was concluded that the fœtal head was to the left and inferior portion of the uterus, and the pelvic extremity to the right and upper side. The absence of a battlement showed the fœtus to be dead. M. S. determined to deliver by turning; the patient was placed in the required position, and ether exhibited with the usual results. Seeing that sensibility had almost entirely ceased, M. S. attempted the introduction of his hand into the vagina, when the woman immediately wakened up, and resisted him with loud cries; he then desisted for two or three minutes, until insensibility was complete. From that moment he was enabled to introduce his hand into the vagina, and accomplish the necessary operation without the patient at all resisting him, or complaining, although the passage of his hand through the vulva was not effected with greater ease than is usual in primiparæ. Having seized the foot which presented at the os uteri, M. S. attempted to extract the fœtus, but so powerful were the uterine contractions, that the thighs could not be disengaged. Having applied a noose upon the right foot, M. S. then introduced his hand again in order to seize the other foot still in the uterus; he had at first great difficulty in passing his hand through the os uteri, and even after having succeeded in this, he was unable, in consequence of the violence of the uterine contractions, to penetrate far enough into the uterus to reach the left foot: he found himself compelled to desist from this attempt, and at length with great difficulty succeeded in extracting the body of the fœtus from the uterus, but the os uteri still contracted so powerfully round the neck of the fœtus, that he could not proceed with the extraction. During the whole of this time the ethereal inhalation had been continued, and the patient had remained in a state of complete and uninterrupted repose and insensibility. The patient at length showed an inclination to vomit, and without much effort ejected a large quantity of frothy mucus; about a minute thereafter she woke up, and said she had dreamed that some one had attempted to deliver her, and had thereby caused her pain; she gradually recovered, and complained only of a slight uneasiness in the head and throat. The head of the fœtus remained all this time encircled by the os uteri: in about an hour uterine contractions were renewed, and a few slight extracting efforts sufficed to complete the birth of the fœtus.—*Monthly Journal of Med. Sciences*, July 1847, from *Gaz. Méd. de Strasbourg*, March 1847.

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92. Dr. Tyler Smith, in an interesting paper published in the *Lancet* (March 27th), investigates the action of ether in connection with the physiology of parturition. He points out the different parts taken in that process by sensation, volition, and emotion, and from this examines the applicability of ether to labour.

"What benefits can be conferred, what injuries hazarded, by the use of ether?" he asks, and then says, "pain and emotion may be obliterated; all, or nearly all, of shock which belongs to pain and mental emotion may be averted; but, at the same time, volition, and the salutary influence exerted by pain and emotion on the motor actions of labour, are withdrawn. In successful cases—that is, when the brain only was affected—parturition, as a reflex function, would not be interfered with. There remains to the woman, in its full intensity, all that portion of *shock* which depends on the spinal marrow and the ganglionic system. There are added, in some cases, the increased tendency to puerperal convulsions, and the collapse

described in the cases of Messrs. Nunn and Robbs as the effects of the ether itself, and which has also occurred in many unrecorded cases. The dangers, incurred by the use of ether in midwifery, would be that of convulsion, and of the meeting of the physical shock of parturition with the shock or collapse produced by the ether itself. Whenever this complication occurred, there would be considerable danger. Briefly, I may repeat, there is, on the one hand, the absence of pain and of painful emotions, with their attendant evils; on the other, there is the physical shock unaverted, the tendency to convulsion, and the possibility of dangerous collapse—a possibility which, in some surgical cases, has passed into fatal certainty."

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§ 5. *Present State of Opinion in regard to the use of Inhalation of Ether.*

93. It will, we think, be interesting to our readers to learn the present state of opinion in regard to the employment of inhalation of ether, and we have, accordingly, endeavoured to collect it, and to represent it fairly. We think this has not yet been done, and it is interesting, not only in a historical point of view, but may be important in contributing to aid the reader in forming his own opinion on the subject.

Dr. Ranking, in his Half-Yearly Abstract, remarks:—"The introduction of the inhalation of ether, for the purpose of annihilating pain in surgical operations, and of depriving even the dreaded process of parturition of its pangs, has not been exempted from the ordinary fate of novel propositions in medicine, although it must be allowed that the objectors to the value of this agent form the minority of those who have been led to reflect upon its applicability. Still there have not been wanting, in every locality, some over-cautious or over-timid persons, who are haunted with the idea of the danger which must attach to means so extraordinary, and who look upon an ether inhaler as almost a synonym for apoplexy or asphyxia. These individuals, however, as we have said, are few in number, and their opinions are, therefore, of little consequence as respects the estimation of the agent; the real danger to which it is exposed arises from the precipitate encomiums of its friends, and the reckless manner in which it appears to be made use of, without reference to, and by persons utterly incapable of judging of, the normal or diseased physical peculiarities of the patient."

Mr. John F. South, in a postscript to his edition of Chelius's Surgery, observes: "The avidity with which ethereal inhalation has been generally adopted, and apparently without considertion of the possibility of its indiscriminate employment being ever attended with danger, is one of the most remarkable circumstances connected with it. But, that it is not unfrequently accompanied with inconvenient and even dangerous results there can be no doubt."

He relates some cases in which injurious effects were produced, and then remarks:—"I have thought it right to mention these facts, to put practitioners on their guard in the employment of ethereal inhalation, for I feel assured, that unless more cautiously employed than hitherto, it will not be long before many disastrous consequences will result. A medical friend of high standing, with whom I had some conversation, insisted on the propriety of subjecting the patient to some preliminary trials of the effect of the inhalation before employing it at the time of operating. With this opinion I fully concur, and I should certainly adopt it, if I made up my mind to try inhalation at all; but upon that point I am not decided, for I have considerable doubt of the propriety of putting a patient into so unnatural a condition as results from inhaling ether, which seems scarcely different from severe intoxication, a state in which no surgeon would be desirous of having a patient who was about to be submitted to a serious operation.

"It was suggested, with much appearance of probability, that a far more important benefit than even the prevention of pain would arise from the use of ether; that it must lessen the shock to the nervous system generally, and that the after-treatment would be greatly facilitated by the absence of constitutional irritation. But experience has not confirmed these hopes. A patient who recently underwent an important operation, which was performed with rapidity and skill while he was quite unconscious, gradually sank, and died in three weeks, although little blood had been lost, and there was no organic disease found after death to account

for the unfavourable termination of the case; there were two fresh effusions of blood beneath the arachnoid membrane. Another case, still more recent, terminated fatally within three days; the patient never rallied from the sedative effects of the ether, while, at the same time, the spasms in the stump of the amputated limb were unusually severe.

"In conclusion, I may observe that there are no operations in which the use of ether seems to be so decidedly *contra-indicated*, as in those for the cure of cataract; for, when skillfully performed, they cause hardly any pain, so that stupefying the patient is at least superfluous. But voluntarily to induce congestion in an organ, where inflammation, once set up, is so difficult to control, and where, if unchecked, it produces such deplorable effects, appears to be the height of imprudence. Yet all this risk has been run, and the non-professional public have been astonished to hear how quickly a cataract may be got out; the final results of the operations have not been so eagerly proclaimed."

Mr. Braithwaite, in his Retrospect for January—June, last, states: "It is possible that when we are better acquainted with the kind of cases in which this agent may be safely used, that it may prove a valuable addition to operative surgery, and even in many medical cases; but at present we are strongly disposed to think that its value has been vastly over-rated. We know many eminent hospital surgeons who feel little disposed to rely upon it in future, and who assert that if they had occasion to submit their own persons to a surgical operation, they should prefer the endurance of the pain to the risk of the ether. In short, surgeons are not yet masters of the subject. It requires further investigation, and the cases more minute classification.

"At present, we find many objections, attributable perhaps to our ignorance of its minute effects, and the cases exactly fitted for it. Some of these objections we find excellently worded by the learned editor of the Medical Gazette.

"In the first place, it is impossible beforehand to fix the dose of vapour that will be required to produce given effects upon any patient. Then it is not always easy to ascertain when enough has been administered: we cannot rely on the state of the pupil, or the pulse,—perhaps the change in the breathing is a more certain sign.

"Again, we cannot predicate the form which the intoxication may assume,—whether that of coma, or excitement; the latter state would be an evil in the performance of any operation;—and in some,—hernia and lithotomy, for instance, a sudden movement of the patient might endanger his life.

"Unconsciousness of suffering is not always desirable, for we sometimes wish to know if nervous cords are unnecessarily touched.

"And besides all this, very serious consequences have already resulted from its use: an affection of the nervous system approaching apoplexy,—syncope,—dyspnœa,—and spitting of blood. Death also has followed its use in many instances; in some of which, as that of Mr. Nunn, in this country, and the two cases of M. Jobert, in France, the fatal issue has been attributed to the use of ether. It is probable that if the deaths were faithfully recorded, we should find that in many more instances, they were not from ordinary causes."

Again he observes: "There is no doubt that there have been numerous other cases of a very unpleasant, if not of a positively dangerous character, from the use of this remedy, which have never met the public eye.

"After careful observation, therefore, we cannot but think that the favourable impression on the minds of the profession, and of the public, has been produced, to say the least, prematurely, and without sufficient evidence and proper discrimination of the cases and constitutions subjected to its influence. And we will further state that it is the impression among many experienced men, that in a very short time, it will be but seldom used, if it do not fall completely into disrepute."

At a meeting of the *South London Medical Society*, April 15th, Dr. Gull read a paper on the effects of ether on the different classes of animals, and concluded with queries whether it was useful to abolish pain during surgical operation, whether this can be safely done by ether, and whether the presence of ether in the

blood modifies the healing process. This paper elicited the following opinions from Mr. Travers and Mr. B. Cooper.

Mr. B. Travers, Jr, remarked, that the proximate as well as immediate effects should not be overlooked, as he believed the effects of ether were progressive, and that a man having been under its influence might die in the course of five days as well as of twenty-four hours. He had known a limb five days after death smell strongly of the ether, the stump having become gangrenous. He believed it to be a poisonous and dangerous remedy, attended with the greatest risk, and requiring the most profound caution in its use.

Mr. Bransby Cooper, in reference to Dr. Gull's question "whether it was right in operations to alleviate or prevent pain, provided it could be done with perfect safety?" remarked, that pain was a premonitory condition, no doubt fitting parts the subject of lesions to reparatory action, and therefore he should feel averse to the prevention of it. In parts operated upon under the influence of ether, there was no muscular contraction, no retraction of the larger vessels, and the small ones continued bleeding; he alluded to a case of lithotomy under the influence of ether. The operating surgeon remarked that, with the exception of the flow of blood, it was like cutting through dead flesh; the parts fell, as it were, asunder, and the sensations were quite different on passing the finger into the bladder. Dr. Gull's paper had more than ever convinced him that it was a poison, and unless other experiments proved it harmless, he should give his decided opinion against its use.—*Lond. Med. Gaz.*, April 2, 1847.

The editor of the *Medico-Chirurgical Review*, April, 1847, after speaking of the enthusiasm which existed with regard to the inhalation of ether both in the public and profession, observes:—"Excusable as this is in a matter of such momentous interest, we fear it has led to a too indiscriminate adoption and a too exaggerated estimate of the value of the remedy, and has certainly given rise to practices which are highly derogatory to professional dignity. The theatres of our hospitals have been made the scenes of operative display before crowds of 'fashionables, lords, princes, distinguished foreigners,' and the like, and the proceedings within their walls chronicled in the columns of the daily press with all the tact, exaggeration, and conventional phraseology of the penny-a-liners; who, we sincerely hope, will not be allowed to convert the *entrée* so injudiciously granted them upon the present occasion, into a precedent."

The editor of the *Monthly Journal of the Medical Sciences*, in his number for April last, remarks, "Since we last noticed this subject, although the inhalation of ether has been practised to a great extent, much of the enthusiasm which at first prevailed respecting it has been dissipated. The occasional unpleasant, and in a few instances even fatal effects which have resulted from its use, have caused a salutary check to the extravagant anticipations which were formed with regard to it. Further experience only can enable us to form correct notions of those circumstances which may render its application warrantable. In the mean time it is our intention to give a short summary of the novel facts which have been elicited in connection with etherization during the past month."

He further states that he is informed that Prof. Syme has abandoned the use of ether in his surgical clinic.

The editor of the *Dublin Quarterly Journal of Medical Sciences*, in his number for May last, states, "We regret to say, that our fears with respect to the general employment of this agent, contained in our last number, have, in several instances, been verified. Several deaths, caused either directly or hastened by the inhalation of the vapour of sulphuric ether, have lately been recorded, and the journals that were at first loudest in its praise have recently assumed a very cautious tone on the subject."

It is proper, before closing this article, to state, that in Boston, where the practice of exhibiting ether originated, it has been administered in a large number of cases, and is now habitually employed by several very distinguished surgeons and obstetricians, whose confidence in its efficacy and safety, we learn, continues up to the present moment unabated.

AMERICAN INTELLIGENCE.

ORIGINAL COMMUNICATIONS.

Report of Cases of Typhus Fever, observed at the Lazaretto, near Philadelphia. By F. W. SARGENT, M. D.

During the month of June, I had the opportunity of observing, at the Quarantine Station, several cases of "Ship Fever," as it is called. The following notice has been condensed from observations made at the time.

There were thirty-seven cases of fever in all, of which thirty-three were taken from one ship, "The North Star;" the remaining four were taken from two other vessels, two from each. The two latter ships sailed from Belfast and Londonderry respectively; having on board their full complement of passengers, generally in good condition, and pretty well furnished with provisions and other necessaries. The "North Star" sailed from Liverpool with one hundred steerage passengers. Very many of them excessively poor, and already suffering in health in consequence of the discomforts to which they had been subjected in Ireland, and also in Liverpool, whilst waiting for a passage. The bread-stuffs which were laid in for their consumption during the voyage, were of a very inferior quality.

The general impression on board the vessel, was, that one of the passengers, a woman, was sick when she embarked. This person was extremely poor, and had been compelled to remain in Liverpool many weeks, amidst a crowd of emigrants, in a very miserable condition. She remained sick from the time the vessel sailed, during the whole voyage, and was removed from the ship at the Lazaretto, in a state of great prostration, yet free from fever.

The ship sailed from Liverpool on the 7th of May. The first death occurred on the 17th of May, in the case of one of the children of the woman above mentioned. On the 29th, another child of the same woman died. On the 13th of June her two remaining children were also removed; the ages of the four, in the order above mentioned, were 4 years, 9 months, 2 years, and 6 years. In all eight persons died on the voyage.

With regard to the question of contagion, sufficient data could not be gained to afford any satisfactory conclusion. It is important to note, however, that the captain of the ship, both mates, the cook and seven of the crew sickened, either during the voyage, or immediately on reaching the quarantine ground, and all presented well-marked symptoms, such as were offered by the sick passengers. These men were all healthy and vigorous, as well fed and as comfortably provided for, as seamen generally are. Moreover, Dr. Jones, the regularly constituted Lazaretto physician, contracted typhus fever, while in attendance at the station upon some fever patients taken from on board ship, in May last. No case of fever has occurred among the nurses of the station.

The symptoms presented by the patients observed, were ascertained by careful and repeated inquiry of themselves and their friends, and by attentive observations at the bed-side. They may be divided into the symp-

toms of the disease in its forming stage, and those of the fully developed affection.

The disease was ushered in by chilliness, in many of the cases, perhaps in all. The numerical frequency of this symptom could not of course be ascertained precisely, because many of the patients, when they were first brought under my notice, were not qualified to give information on this point, neither had their earliest complaints been observed by others. In some cases repeated rigors were experienced; in others the sensation was merely of chilliness. Pain in the back and limbs was a frequent symptom, and in one patient, whom I had the opportunity of observing from the commencement of her illness, the pain in the sacral region was exceedingly severe, as much so as in very bad cases of small-pox;—this woman died. Without exception all the patients complained of headache; this was variable in intensity, sometimes very severe, as intimated on the part of the sufferers by the expressions "splitting," "bursting," &c., of the head; in other cases it was more supportable in its degree. The seat of the pain was not fixed; sometimes it affected the frontal, sometimes the superior, and sometimes the posterior region of the head. A marked degree of sleeplessness characterized the onset of the sickness in every case; in the instance of the captain of the ship, the want of sleep was so severely felt that he took every night, before reaching the quarantine ground, large quantities of laudanum; which, however, failed of its intended effect. In all the cases brought under my notice, delirium was a symptom present from an early period. Generally this was of a quiet, manageable character, the patients keeping their berths, and exhibiting their aberration only in random, unconnected talking, more or less obstinacy in refusing attention and assistance, aversion to their children or friends. Some, on the other hand, were with difficulty restrained from wandering about the ship, and from making a great deal of noise, &c. &c. The more active delirium was most marked at night. Loss of strength was also a notable phenomenon connected with this stage of the disorder: it was common as well among the previously robust and well-nourished sailors, as among the passengers. This prostration affected the mind as well as the body. The sick generally became utterly careless and indifferent as to their own situation and condition, and unsolicitous for their nearest friends. In other instances, where there was every disposition to the performance of accustomed duty, the mind seemed to have lost all power of observation, and combination of ideas, and was incapacitated, equally with the body, for exertion; thus the captain and the mates became entirely unable to calculate the position, or to lay down the course of the vessel.

More or less fever was observable almost synchronously with the first complaint, in those patients whom I saw at the beginning of their sickness. The pulse in the first period, beat from 90 to 100; soft, regular, of good volume—the skin was warm and moist; the tongue covered with a thin, moist yellowish fur, excepting at the anterior extremity, which was clean; the bowels were not disturbed at first; indeed, in all the cases, according to the most accurate information I could gain, the habit was costive at the commencement; the abdomen was in every case retracted, rather than full; nausea and vomiting were rarely complained of; the thirst was generally marked, though not insupportable; the appetite was entirely lost; the respiration was somewhat accelerated, in proportion to the frequency of the pulse, and the heat of skin; cough was an exceptional symptom in this stage, and when present it was very slight and dry, and unconnected with

any appreciable rale. Bleeding at the nose occurred in four cases only, of the thirty-seven; at this period of the disease, the eye was clear, but dull and heavy; the cheek flushed, as in other febrile affections, acquiring at a later moment the appearance common in typhus fever; the sense of hearing was slightly, if at all, obtuse.

The disease, when fully developed, was especially marked by increased oppression of the intellectual and sensorial functions. The mind became much more sluggish and dull; there was a more or less continued disposition to sleep during the day, frequently interrupted at night by delirium, generally of a non-violent character; muttering; the eyes suffused and void of animation; the cheeks covered with a dusky red flush, and the whole expression resembling that of a person very much intoxicated. The hearing was obtuse, sometimes very much so, accompanied generally by confused sounds, as of rumbling, or rolling, and the like. In one case only were there convulsions; but, with few exceptions, all had subsultus tendinum; in most this involuntary motion was confined to the wrist and fingers; in some, the muscles of the face, especially those about the mouth, were in a state of almost constant agitation. This latter symptom (agitation of the muscles of the face,) is properly regarded as a very unfavourable one; of the three patients who presented it in the most marked degree, two recovered. The convulsion, in the single case alluded to, occurred on the ninth day from his first complaining, and lasted but a very few moments; there was a slight twitching of the muscles of the face, both sides equally, the eyes became fixed, and the limbs perfectly rigid; this did not recur. But for the succeeding twenty-four hours, he presented some singular symptoms; when asked to protrude his tongue, he replied that he could not; when asked any question, which would oblige him to converse, he replied that he could not speak; he passed the entire twenty-four hours resting upon his left elbow, gently moving his body backwards and forwards, while in this position, and could not be induced to lie down. This patient recovered very speedily, being dressed and walking out on the sixteenth day from the commencement of his illness, on the tenth from his admission into the hospital.

The skin during this period became dry and hot; the calor mordax; the pulse increased in frequency, becoming at the same time more feeble, sometimes undulating; its frequency was variable; thus, of 15 cases in which it was noted, its greatest frequency was in each case respectively, 104: 98: 112: 80: 104: 128: 112: 100: 116: 105: 120: 124: 112: 140: 124. In two of the cases a remarkable diminution in the frequency of pulse occurred during convalescence; thus, in one patient whose pulse had been as high as 112, it fell during convalescence to 36 per minute; in another, from 80 to 42; in these two cases the pulse beat regularly throughout the illness; in a few others it became irregular during convalescence; and in others again some irregularity occurred only on the approach of death. The action of the heart was carefully noted: the impulse was found to be feeble in every case; both sounds were distinctly heard, without unnatural murmur. The respiration was more frequent than in health, but not more so than might have been expected considering the more frequent action of the heart; in only four out of thirty-seven cases, was there any abnormal sound audible in the respiratory movements. In one there was always mucous rale over the lower part of the right lung, from the root downwards, without bronchial respiration, or increased vocal resonance; the percussion was appreciably more dull than on the left side; the period

of the disease in which this condition occurred could not be determined, from the want of any accurate knowledge as to the date of seizure. In two cases the same condition was first appreciable at the close of the second week. In the fourth instance,—a loose mucous rale existed about the root of the lungs, unaccompanied with dullness; this also appeared at the close of the second week.

In one case only was there distension of the abdomen; it was generally of about the same degree of fullness as is common in health; in many cases, however, it was decidedly retracted. In one case only was there any perceptible sensation of gurgling upon pressing in the right iliac region. Of 32 cases, 19 had no diarrhœa; of these latter 4 were costive. The remaining 13 patients had from four to eight passages daily; the evacuations being thin and yellowish, free from blood. The urine in all was small in quantity, of a reddish-brown colour, emitting a decided ammoniacal odour upon standing a short time. In four patients there was retention of urine, requiring the use of the catheter. The tongue was dry, in many cases covered with a dark brown incrustation and fissured; the teeth and gums at the same time covered with sordes. The surface of the body was in every case, excepting one, abundantly covered with petechiæ; this exceptional case presented in a very marked degree all the other symptoms of typhus fever. The petechial spots were of a purplish-red colour, becoming darker a few days after their appearance than at first; beneath the surface, and unaffected by pressure upon it; very numerous; generally circular in form, but sometimes oval, varying in size from a line or a line and a half to a fraction of a line in diameter. There was also another sort of eruption, consisting of spots of a much lighter hue than the first, sensibly elevated, in most instances; generally oval in shape, but sometimes circular, and again having no definite form; in size varying from a fraction of a line to two lines in diameter; partially, sometimes wholly, disappearing under pressure. Both of these varieties were diffused over the entire surface, excepting the face and forehead, but were most abundant on the abdomen; the paler variety was more numerous than the other. In six cases of which I had the opportunity of witnessing the whole course, from before the appearance of the eruption, this was first distinguishable on the eighth day in one case; on the sixth, in two; on the seventh, in one; on the fourth, in two. The two varieties appeared simultaneously, but the paler receded first; the precise period of its disappearance I am unable to state; it probably took place, however, in the early part of the third week. In addition to these smaller spots, there were in a few cases large purple blotches, superficial stains of the surface, in which the circulation was extremely languid. Of 32 cases, only three had sudamina. In one of these their time of appearance could not be determined; they were very numerous over the neck and upper part of the chest anteriorly:—in another instance they appeared in the early part of the third week; they were not abundant, and were confined to the breast:—in the third, they appeared for the first time on the eleventh day upon the breast; had all vanished in the course of twenty-four hours, and again reappeared on the fourteenth day, very numerous and very large, and were diffused very generally over the trunk and extremities, being most abundant, however, over the abdomen. The peculiar odour exhaled from the body, noticed as existing in cases of typhus fever, was appreciable in the first period of the disease in most of the patients, and to a greater degree in the fully developed affection. At no time, however, and in no

instance was it so very heavy and offensive, as it has been found to be in many epidemics of typhus fever.

There was more or less bleeding from the nose in 11 patients out of 32, during this second period; in one of these there had been previous bleedings; it recurred on the eighth day of the disease. The precise date of the bleeding could be ascertained only in one other instance; in this it occurred on the ninth day. The hemorrhage in all, excepting one instance, was very slight, and should rather be called an oozing of a thin pale-red fluid; in one case, however, it was very abundant, and was arrested with great difficulty, and only after the individual had fainted from loss of blood; this occurred before the ship arrived at the quarantine ground; the patient eventually recovered. In a few cases a similar oozing appeared to take place from the gums.

I can only state the period at which the change in the degree of illness occurred, in five patients, constituting what has been termed, herein, the second period; the other patients came under my observation after this stage was fully developed. Considering this stage as characterized particularly by obtuseness of the cerebral functions, it was developed in one case on the 8th day; in one on the 9th; in two on the 7th; in one on the 5th.

The ages of the patients were as follows: under 6 years, 3; from 6 to 20, 5; from 20 to 30, 17; from 30 to 40, 7; from 40 to 50, 5. The duration of the disease, from the time of sickening until the patient was able to walk about, free from ailment, was, as nearly as could be ascertained, in fourteen cases, as follows: 13 days in 3 cases; 14 in 1; 15 in 2; 16 in 3; 18 in 1; 19 in 1; 20 in 1; 21 in 1; 22 in 1. From the time that the patient became entirely convalescent, free from fever, &c., until he was sufficiently strong to be dressed, and to walk about the wards, an interval of only 3 days elapsed in 9 cases; of 4 days in 3; of 6 days in 2. Death occurred in one case on the 7th day of the illness; in three on the 10th; in one on the 17th.

The degree of emaciation was very moderate in all the patients who recovered; the digestive powers were speedily restored to their full force, and the natural embonpoint and strength quickly regained.

The appearances after death in four subjects which were carefully examined, were the following:

Externally.—Moderate emaciation; rigidity of limbs; large purple patches at the flexures of the limbs, and on the inferior parts of the surface; no sudamina; in three the deep purplish-scarlet circular petechial spots remained more or less numerous, and diffused over the trunk and limbs, the lighter-coloured spots having disappeared; the abdomen was retracted in all. The eyes were sunken, and the features pinched.

Contents of Cranium.—Cerebrum of excellent consistence. Cerebellum very slightly softened in three of the subjects. The venous sinuses were moderately full of a dark-coloured blood, without coagulum; the ventricles contained, in each case, from ℥j to ℥ij of serum, slightly stained; no injection of membranes, and no adhesion of them to the surface of the brain. A freshly cut surface of the brain exhibited not more than the usual number of bloody points.

The *Heart* in all had a somewhat flabby, soft feel, though the consistence of the walls was not appreciably diminished. The valves in all were healthy; the lining membrane of the cavities of the large trunks was stained; the blood was dark-coloured and fluid, one only containing a coagulum, which was small, very soft, and pale. In all, the size of the

heart was normal. The pericardial sac contained a few drachms of slightly-reddish serum, free from flocculi; the lining membrane unaltered.

The *Lungs*, in two instances, were perfectly healthy, excepting that some degree of congestion existed at the inferior posterior part; in one of these, a few delicate, pale bands of lymph were stretched across the right pleural cavity, evidently of old formation; in each of these cases, the pleural cavities contained between ℥ss and ℥j of stained serum, without flocculi. The bronchial membrane was stained correspondingly with the tissue proper of the lungs; this stain was uniform, dark-coloured, without abrasion or softening of the membrane. Death took place in these two instances on the tenth, and on the seventh day. In the other two instances, the right lung in each was slightly softened in the lower lobe, (which, however, contained air,) and deeply stained. The cavity of the right pleura was, in each instance, traversed by bands of lymph, pale in one, in the other stained, in both very firm; ℥j of stained serous fluid existed in each; in one of these latter instances, the liver was firmly and closely attached to the diaphragm, by false membranes of old formation; in this case, death occurred on the seventeenth day. The bronchial glands were unaffected.

The *Liver* was not appreciably altered in any case.

The *Spleen* seemed of good consistence in all—tearing with a granular surface, and resisting pressure about as well as the spleen usually does. Its size varied;—in one instance, it measured 3 by 3½ inches; in one, the dimensions were 2½ by 4 inches; in a third, 3 by 5; in a fourth, 4 by 7 inches. The colour of the organ was bluish, with a perceptible tinge of green.

The *Kidneys* felt soft and flabby, but their consistence did not appear to be really diminished.

The *Bladder* offered no appearance of disease.

The *Stomach*, in three of the four subjects, was pale; in one, it was deeply stained at its greater curvature. In none was there any softening or abrasion of the mucous membrane; in two, this was covered with a thick, viscid semi-fluid matter of a yellowish colour. The organ was at a medium degree of distension in all.

The *Intestinal canal* in one instance was uniformly stained from the lower extremity of the jejunum to the transverse colon; there was no softening of the mucous membrane in this case, nor abrasion, nor inflammatory injection, simply, a dark-coloured stain; the larger veins were turgid. The isolated follicles were visible, scattered here and there throughout the length of the small intestine, and less numerously in the upper part of the colon. The agminated follicles were very apparent in the lower half particularly of the ileum; the last three feet of the small intestine contained five of these patches of Peyer. The mucous membrane covering them was stained, as elsewhere, and the tissue of the glands themselves apparently slightly reddened also; the lining membrane of the canal was not very sensibly elevated at these points, nor abraded at all. Some of the mesenteric glands, near the lower extremity of the ileum, were enlarged and injected, of a reddish-brown colour; most were very small; a few measured from ¼ to ¾ of an inch in the long diameter. No softening in any instance.

In the other three subjects, the mucous membrane of the intestinal canal was pale. No turgescence of the large veins. In two, the glands of Peyer could not be seen at all with the naked eye; in the third subject, they were numerous, their outlines well marked, and the bluish dotted

appearance within; no thickening, abrasion or discoloration of the mucous membrane covering them. In one the isolated follicles were not perceptible; in the other two, they were sufficiently numerous. In these three instances, the mesenteric glands were pale, and the largest scarcely the size of a pea. The large intestine exhibited no evidence of inflammation or softening, or any disease.

The serous membrane of the abdomen presented no departure from its ordinary healthy condition, excepting in the single instance already mentioned, in which the opposed surfaces of the liver and diaphragm were adherent.

The treatment consisted in the administration of tonics and stimulants, with the use of calomel in very small doses, combined with ipecac. or Dover's powder, or opium alone. The preparations of Peruvian bark, and chiefly sulphate of quinia, were the tonics made use of. Punch, carbonate of ammonia, brandy, &c., were the stimulant remedies most resorted to. As local applications, I found frequent cold sponging of the surface of great service, as were likewise blisters in some cases; also dry and wet cups, and stimulating lotions. The diet consisted of farinaceous articles, broth, essence of beef, and, upon convalescence, a mixed animal, and vegetable regimen.

Operations for Femoral Aneurism. By Charles Bell Gibson, M. D., Prof. of Surgery in the Medical Department of Hampden Sidney College, Richmond, Va.

Patrick M'Vastry, æt. 45, a prisoner in the Maryland Penitentiary, presented himself to me, on the 25th of June, with a large tumour occupying the greater part of the inguinal triangle (Scarpa) on the inner and anterior part of the left thigh. Its true nature was immediately discovered, and the patient put in preparation for an operation. From the close approximation of the aneurism to the crural arch, it was deemed expedient to tie the external iliac artery, and after a week's preparatory treatment, consisting in the regulation of diet, and attention to general health, I performed the operation on the 2d of July, assisted by my friend Dr. Alfred Baker.

The patient being placed on a narrow table, with the shoulders elevated, an incision three inches and a half long, was made about an inch above and parallel with Poupart's ligament, commencing opposite the anterior superior spinous process of the ilium, and ending a little above the external ring.

The first cut divided the skin and superficial fascia, and exposed the tendon of the external oblique muscle, which was next divided to the same extent on the director. The lower margins of the internal oblique and transversalis, were now formed and divided to the extent of three-quarters of an inch, upwards, when the fascia transversalis was exposed and torn with the finger nail, and the artery then discovered on the inner border of the psoas muscle, covered by the sheath it receives from the fascia iliaca.

The director was here used to rupture the sheath, on the inner side of the artery, and detach it from the vein, and when the whole circumference of the artery was thus cleared, the aneurismal needle armed with the ligature was easily passed around it, from the inner side above the epigastric.

The ligature was now drawn firmly and tied, and the pulsation in the tumour instantly ceased. The divided internal oblique and transversalis muscles were carefully adjusted, the wound sponged clean, and the edges

brought together by the interrupted suture and adhesive straps, leaving merely space for the passage of the ligature.

On the third day after the operation, the wound was examined and union found to have taken place by the first intention, with the exception of about a quarter of an inch around the ligature. The sutures were cut out and the straps retained. A slight discharge had stained the compress. The wound was dressed daily. On the twenty-first day the ligature was drawn away with a very slight effort, and the opening left, gradually contracted and healed.

About ten days after the operation, the patient drew my attention to another tumour about the middle of the femoral artery on the opposite thigh, also aneurismal, and the size of a large walnut. I tied the femoral artery on this side, in its upper third, in the presence of Dr. Baker, Dr. Brockenborough, of Richmond county, Virginia, and Mr. Crittenden, a student from Virginia. The pulsation ceased immediately on the application of the ligature. The wound also healed by the first intention, and the ligature was detached on the eighteenth day.

The patient is now entirely well, and almost strong enough to resume the usual labour of the convicts.

BALTIMORE, *August 20th*, 1847.

Case of Abscess of Bladder.—By LAURENCE TURNBULL, M. D., of Philadelphia.

On the morning of the 17th of April, I was desired to visit an old gentleman aged seventy-seven, who was said to be suffering from gravel, and with a request that I would bring my instruments. He had neglected for several hours to evacuate his bladder, and when he endeavoured to do so, found he could only pass a few drops with great pain. I learned from him that he had suffered previously from similar attacks, and had been relieved by the introduction of the catheter, but no means had been used to prevent a recurrence of the difficulty.

After placing him in a warm hip bath, and giving him an enema of starch ℥ij, laudanum ℥ss, I endeavoured to introduce a silver catheter made a little longer than usual; but without the use of improper force, could only pass it up to the prostate gland, which I found to be enlarged. I therefore withdrew it, and sent for an eminent surgeon, since deseased. This gentleman made a trial with a gum catheter, but without effect, and finally forced the silver catheter through the projecting part of the gland into the bladder. A considerable portion of urine was drawn off of a dark red colour; the first portion being mixed with blood, having a strong ammoniacal odour. Another anodyne enema was then administered, the bowels to be subsequently moved with castor oil, and mucilaginous drinks freely given. He passed a comfortable day, and did not suffer much until 9 o'clock in the evening, when he was relieved and slept part of the night, but suffered the same distress at 5 o'clock next morning, when I drew off the urine, leaving a gum catheter in the urethra for two days, but it did not restore the tone of the bladder. The urine now became charged with a tenacious mucus of an alkaline character, so thick as to be with difficulty poured from one vessel to another. He was then ordered to drink freely of an infusion of Pareira Brava, also a suppository of two grains of opium, and five grains of extract of hemlock, to be given at night. He rested better as it soothed the gland, and relieved the hemorrhoidal irritation of the mucous membrane of the rectum. The alkaline mucus soon

ceased to flow, but for nearly three weeks, it was necessary to introduce the catheter three times a day. His pulse was normal and appetite good, but towards the beginning of the fourth week, he suffered from loss of appetite, with rigors, and great uneasiness from the urine, although much reduced in quantity. As soon as a few ounces were collected in the bladder, it caused the most violent spasms with intense pain, making him scream with agony; these paroxysms lasting with intermissions of from fifteen to twenty minutes, except while under the influence of opium, and even then the peculiar twitching of the muscles of the perineum and abdomen was observed. The pulse now became small and intermitting, tongue brown and cracked with the quantity of urine still decreasing. He complained much of internal heat, and his only desire was for ice, allowing the abdomen the slight covering of a sheet. These symptoms were accompanied with great restlessness, and occasional vomiting of a dark substance of a very disagreeable odour. His intellectual faculties continued unimpaired, until he became comatose, the two days before his death, which took place at 9 o'clock, on the evening of the 17th of May. I am indebted to the politeness of Prof. Pancoast, in being present at the post-mortem, the bladder being now in his possession, in the Museum of Jefferson Medical College.

Post-mortem twenty-four hours after death.

Upon examining the body externally, there was a hernial tumour, and a hydrocele was found on the left side, from which he had suffered for several years. Upon opening the peritoneal cavity, adhesions were found, and the intestines were glued together with freshly effused lymph, and their coats injected, forming a true case of acute peritonitis. Upon raising the intestines, we found that a large portion of omentum was down in the hernial sac, being attached to the walls of the abdomen by the pressure of a truss. Upon removing this, and raising the bladder, there was a quantity of pus found within the pelvic cavity, of a dark, grumous character, occasioned by the opening of an abscess, situated upon the summit of the bladder. There were also three smaller abscesses on the lateral surface of the organ, communicating with its cavity, and a much larger one on the anterior portion of the prostate gland. There was also an opening, like that made by a catheter, through the third lobe of the prostate, which projected into the cavity like a nipple. Posterior to this, in a pouch, there was a large portion of lymph, partly organized, and imbedded in which was a mass of white particles of phosphate of lime, forming a kind of mortar. The whole length of the bladder was about five inches and a half, and its width four and a half; the cavity was capable of containing from three to four ounces of urine. Its walls were half an inch in thickness, and the prostate gland, on its lateral side, was two inches and a half long, and two and a quarter in breadth; being about eight times the size of the gland when healthy. The kidney of left side was very vascular, and the papillæ were ossified upon their margins. There was also a serous cyst upon its surface, not connected with the internal portion of the kidney. The right was vascular, but not ossified, and the ureters very much inflamed in their whole course. The spleen and liver were normal, but the splenic artery was ossified, and crackled under the fingers.

DOMESTIC SUMMARY.

On the Effects of Blisters on the Young Subject.—By JOHN B. BECK, M. D., Professor of Materia Medica and Medical Jurisprudence in the College of Physicians and Surgeons of New York.

"The first peculiarity attending the operation of blisters on the young subject is," says Dr. Beck, "*that they produce their effects in a shorter time than they do in the adult.* This is a fact well known to every practitioner. While in the adult they do not produce their effects until from eight to twelve, or even more hours have elapsed, in the child, the same takes place in from two to six hours. In this respect there is a striking difference between blisters and most other remedies. Emetics and cathartics, for example, do not appear to act with any more rapidity on the child than they do on the adult. Now this fact, of the more prompt action of this class of agents upon the child, although a simple one is, nevertheless, one of great importance, and one which should be continually borne in mind. It has a practical bearing, not merely upon the mode of conducting the process of blistering in young subjects, but also upon the use of it in their various diseases.

"The second peculiarity is, *that the local inflammation produced by a blister is greater in the young subject than in the adult.* The reason of this is obvious. In infancy, the skin is more delicate in structure, has greater vascularity, and a higher degree of sensibility; all circumstances favouring the development of greater inflammation. The local impression, accordingly, made by a blister, is not merely more rapidly developed in the young subject, but it is also more intense.

"The third peculiarity is, that in young subjects *blisters are more apt to be followed by the injurious consequences of inflammation, such as ulceration, gangrene, and even death.* Numerous and melancholy instances of this are to be found on record. Dr. Ryan, speaking of the use of blisters in children, says, 'I have seen a blister on the chest followed by sloughing, and an aperture form over the epigastrium, which exposed the subjacent viscera.'* Dr. Thompson states that he 'has seen gangrene and death follow the application of a blister on an infant.'† Dr. North states that he has 'twice known infants destroyed in consequence of the sloughing of blisters, the progress of which could not be arrested.'‡ Professor Chapman remarks, that in children a blister 'sometimes induces gangrene, as I have witnessed in two or three instances.'§ My friend, Dr. W. C. Roberts, informs me, that he has met with two cases in which children sank under the effects of blisters. Numerous other facts of a similar character, might be adduced to show the disastrous effects which sometimes result from the application of blisters to children; and to the minds of many physicians it constitutes a serious objection to their use in their diseases. Dr. Armstrong says, 'I have a great dread of the application of blisters to infants, on account of what is called the local and constitutional irritation.'‖ Now these occurrences may and do take place also in the adult, but they are comparatively rare, and only under very peculiar conditions of the system. In infants, on the contrary, they are by no means uncommon. In any child, however healthy, they may occur from the simple cause of their being left on too long. They are more likely to take place, however, in certain conditions of the system or of the skin itself. Thus, for example, in cases where a child is greatly emaciated, or the constitution broken down from various causes, the inflammation of a blister is very apt to become unhealthy in its character, and to be followed by injurious consequences. Then again, where the skin itself is in a diseased state, it is much more likely to happen than in the healthy conditions of that surface.

"The fourth peculiarity is, *that the constitutional excitement produced by blisters is generally greater in young subjects than in the adult.* That this must necessarily be so, is obvious. In all cases, the general excitement must be in proportion to the

* Manual of Midwifery, &c. By Michael Ryan, M. D., p. 476.
† Materia Medica. By Anthony Todd Thompson, M. D. Vol. ii., p. 535.
‡ Practical Observations on the Convulsions of Infants. By John North, p. 202.
§ Elements of Therapeutics, &c. Vol. ii., p. 28.
‖ Lectures, p. 362.

degree of local irritation, and the sensibility of the patient's system. If so, the general vascular and nervous excitement produced in the child by a blister, must, as a matter of course, be greater than in the adult. So powerful, indeed, is the impression thus made sometimes, that convulsions have been produced from this cause. Dr. North says: 'I have frequently seen very severe paroxysms (of convulsions) brought on in consequence of their injudicious and unnecessary application.'*

"From the whole of the foregoing it is evident, that blisters are much more powerful in their agency upon the young subject than upon the adult. They operate with more rapidity—cause a greater degree of local irritation and constitutional excitement—and their operation is frequently followed by consequences which rarely occur in the adult.

"If such be the case, it appears to me that some conclusions may be drawn of no inconsiderable practical importance

"1. If blisters are more powerful in their action upon children than adults, then it would seem to follow that they may be rendered more efficient as a means of cure in their diseases. And such appears to me to be really the fact. In all cases where their revulsive agency is required, and where they are properly applied, it has struck me that more decided benefit has resulted from their use in children than in adults, and that, too, under circumstances as nearly similar as they well could be. Besides acting more powerfully, the rapidity of their operation in children gives them a great advantage in many cases. We all know that one of the great objections to a blister in the adult, sometimes, at least, is the length of time which it takes to produce its effects. In a child, this is in a great measure obviated, and we have in a blister not merely a powerful, but a comparatively speedy counter-irritant. As remedial agents, therefore, in the diseases of children, it seems to me that they ought to hold a high rank. I am aware, that by some an opinion entirely the reverse of this is entertained. Mr. North, in his valuable work on the Convulsions of Infants, states that he thinks, that except as stimulants in depressed states of the system, blisters are altogether objectionable in the diseases of children. As revulsives in cases of local inflammation, he regards them as having gained a character which they do not merit, and that, in fact, they do more harm than good. On this subject, he says, 'the period at which we apply blisters in local inflammatory affections, is not to be forgotten. We first subdue the severity of the disease by other and appropriate remedies, and when it is upon its decline, when, in all probability, the unassisted powers of nature would successfully perform the remainder of the task, a blister is applied. The patient gets well, notwithstanding the additional pain thus inflicted; and the fortunate result of the case, which is really to be attributed to the measures previously employed, is said to be owing to the good effects of counter-irritation, &c., and the blister gains a character to which, in point of fact, it has no claim.'† Now all this may, no doubt, be true in some cases, but that it is so generally, can hardly be admitted. It should be recollected, that in the treatment of local inflammations, blisters are only auxiliary remedies. Of themselves, and alone, capable of doing but little, and yet, when co-operating with other agents, such as blood-letting, &c., exceedingly powerful and valuable. Every one knows that there are periods and conditions in the career of inflammatory complaints, when bleeding and other reducing remedies have been carried to the fullest extent deemed advisable, and yet sufficient disease may remain, if not to destroy life, yet to render convalescence tedious, or to lay the foundation of subsequent chronic disease. This, of course, it is all-important to obviate. Now it is just under this condition of things, that blisters come in with great effect, and frequently break up completely the remaining vestiges of disease, and in this way I look upon them as remedies, acting with more power and efficiency in children even than in adults.

"2. From the fact of blisters being such powerful agents, and especially from the fact of their being so liable to be followed by dangerous consequences, more caution is required in their use in children than in adults. Important and valuable as they are and may be made, if properly used, their indiscriminate application

* Observations on the Convulsions of Infants. By J. North, p. 209.

† Ibid., pp. 205—6.

cannot be too much reprobated. Just in proportion to the good they are capable of accomplishing under proper circumstances, is the evil which results from them if heedlessly or injudiciously resorted to. It is to be feared that this is not always borne in mind as it should be. As a general rule, they should never be resorted to, especially in very young children, unless some decided benefit is anticipated from them.

"3. The mode of conducting the process of blistering in a young subject, is a matter of greater nicety, and should call for the utmost care on the part of the practitioner. As one of the principal causes of gangrene is the leaving the blister on too long, this is a point which should be specially attended to. To many, this may appear a small matter, but it is really one of great moment, and in relation to which, I am sorry to say, that the directions given in many of our practical works are so discordant, as to be very poor, if any guides to the young practitioner. By way of illustration, I will quote a few of them. Dr. Armstrong says, 'from twelve to sixteen hours is generally sufficient for the application of the blister in adults, and half that period in children.'* Dr. Williams says, that 'to avoid gangrene in children, it is advisable never to allow the blister to remain on more than six hours.'† Dr. Dewees states that 'in children, the blister is frequently found to have performed its duty in eight hours, and very often in six. It should, therefore, always be examined at these periods, and dressed, if sufficiently drawn; if not, it should be suffered to remain until this take place.'‡ Evanson and Maunsell say, 'in no instance is the blister to be left on more than a few hours (from two to four)—not longer, in fact, than until the skin is reddened, when vesication will follow; but this result should not be waited for, as attendants always will do, unless the most express directions to the contrary be given.'§ Neligan directs, that, as a general rule, in infants and young children, blisters should only be left on until redness of the surface is produced, when the application of a warm poultice to the part will cause vesication.'‖ Ballard and Garrod remark, that in children a blister should not be allowed to remain on longer than to produce redness of the surface; and they add, 'in very young infants, it has appeared to us doubtful whether even redness should be permitted to occur before its removal.'¶ The foregoing is a sample of the discrepancy of opinion in relation to a most important point of practice, and one confessedly too, not unfrequently involving the life of the young subject, as advanced by authors of the highest respectability, and who may be supposed to exert a wide influence in guiding the practice of young beginners in our profession. The fact is, and this perhaps may account somewhat for the difference of opinion just noticed, that no positive rule can be laid down in relation to the precise time that a blister should be left on a young child. From the original differences in the sensibility of the skin in children, the period must necessarily vary, and the onfy safe general rule is, to be governed by the actual effect produced. For this purpose, the blistering plaster should be raised at suitable intervals, and the state of the skin observed. And the safe plan is, according to the directions of some of the authors quoted above, to remove the blister as soon as the surface appears uniformly red, and then to apply a soft poultice. In most cases, this will be followed by suitable vesication, while any injurious consequences will be averted."

[Dr. Beck reprobates the practice of covering the blistering plaster with dry flypowder, and speaks favourably of the method of dressing blisters recommended by Dr. Maclagan. (See this Number, p. 452).]

"4. To obtain the good and avoid the evils of blisters, it is evident that a nicer

* Lectures, &c. By John Armstrong, M. D., p. 362

† Cyclopædia of Practical Medicine. American edition. Vol. i., p. 529 Art. Counter-irritation.

‡ Practice of Physic. By Wm. P. Dewees, M. D., p. 28.

§ A Practical Treatise on the Management and Diseases of Children. By R. T. Evanson, M. D., and H. Maunsell, M. D., p. 107.

‖ Medicines, their Uses and Mode of Administration. By J. W. Neligan, M. D., p. 202.

¶ Elements of Materia Medica and Therapeutics. By Ed. Ballard, M. D., and A. B. Garrod, M. D., p. 457.

discrimination of the conditions of the system, is necessary in the use of this class of agents in children than in adults. Long experience has established the fact, that it is only under certain states of the system, that blisters can be used with any prospect of advantage. If this be true in the adult, it is doubly so in the young subject, and any mistake in this respect is much more likely to be followed by injurious consequences in the latter than in the former. Now the conditions which influence the effects of these agents, are the state of the skin, and the state of the nervous and vascular systems. With regard to the skin, it may be laid down as a general rule, that when blisters are used as revulsives, the part to which they are applied should be, as nearly as possible, in a state of perfect health. In this state, the irritation of blistering may be established even in a child with comparative safety. On the contrary, when the skin is in a morbid state, ulceration and gangrene are by no means unusual occurrences. All this is occasionally illustrated in scarlatina and measles. Mr. Pereira mentions that he has seen 'two instances of death from the gangrene caused by applying a blister after measles.'* My friend, Prof. Dunglison, in his valuable work on Materia Medica, states that he has seen 'several cases of death manifestly caused by the use of blisters in scarlatina and measles.'† Other facts of a similar character might be adduced, but the preceding are sufficient to show the tendency which there exists in this state of the skin to take on unhealthy inflammation. And the reason is to be sought for in the changed condition of the skin. During the febrile stage of these diseases, the skin is preternaturally injected and excited. As soon as the fever subsides, and the eruption recedes, the skin is left in a state of debility—a state in which, as we all know, inflammation is very likely to terminate unfavourably. I hope it may not be inferred from the preceding, that I mean to express the opinion, that blisters ought never to be used in such cases as measles and scarlatina—but the possible occurrence of such consequences, ought to make us exceedingly cautious about the manner of using them, and, indeed, ought to deter us from using them at all, unless under a manifest necessity. In every case, therefore, before applying blisters to young children, the condition of the skin ought to be attended to.

"With regard to the state of the system, this is even still more necessary to be inquired into. Indeed, this is all-important, if we hope to realize any of the expected benefits from these agents. Now there are two states of the system almost equally unpropitious to their use—and these just the reverse of each other. The first is that in which high inflammatory excitement is present. That this is unfavourable to the legitimate operation of a blister as a revulsive, is obvious, if we reflect for a moment upon the effects of this agent. These are, local irritation and general excitement. Now, in all cases where an internal inflammation exists, the difficulty of resolving it by any means, will be proportioned to the degree of general excitement accompanying it. If a blister be applied where this general excitement is already very great, one of the necessary consequences will be, to augment this so greatly as to counteract, in a greater or less degree, according to circumstances, the beneficial effects of the blister as a revulsive. Under this condition of things, the internal inflammation will be aggravated instead of abated, in consequence of the increase of general excitement. Hence the fact has been generally observed, that if blisters are applied in the early periods of inflammatory complaints, or before suitable evacuations have been resorted to, they frequently do more harm than good. They merely add fuel to the fire.

"On the other hand, a state of great constitutional exhaustion and emaciation is also unfavourable to their operation. The reason here, however, is entirely different from that in the preceding case. The danger here is that from the impaired state of the vital energies, the local inflammation of the blister may be followed by ulceration, gangrene, and death. In the use of blisters, therefore, both these extremes should be carefully avoided. With regard to the condition most propitious to their use, it is that in which the general excitement is rather below than above the natural standard. When this is the case, there is less danger from any increase of excitement, while the system is in the state most favour-

* Materia Medica, vol. ii., p. 775. American edition.

† Vol. ii., p. 219.

able to the transfer of irritations from one part to another. Now all this is applicable to the adult, and we can easily see how much more so it must be in the case of the irritable and sensitive infant.

"5. In the use of blisters in children, especial reference should be had to the peculiarities of their temperament and constitution. This is more important, perhaps, than it may at first sight appear. Every practitioner must have observed the extreme suffering which adults sometimes undergo from the irritation of blisters. In nervous and irritable habits, I have myself seen a state of things thus induced, little short of frenzy. In children of nervous temperaments, all this is much more likely to happen, and accordingly, greater caution should be exercised.

"If the foregoing conclusions be founded in truth, they would seem at once to expose the impropriety of the practice of resorting to the use of blisters on every trifling occasion, in the management of the diseases of children. There is an opinion prevalent—how it has originated I know not, that blisters are innocent remedies—if they do no good, they can no no harm. Now this is unquestionably a great error, and has been productive of vast mischief. Independently of the unnecessary suffering which they may occasion, they sometimes produce death by the manifest causes of ulceration and gangrene, while in others, they insidiously aggravate the disease they were intended to relieve."—(*New York Journal of Medicine*, July 1847.)

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Ligature of Primitive Carotid Artery.—Dr. H. F. Campbell, Demonstrator of Anatomy in the Medical College of Georgia, records, in the *Southern Medical and Surgical Journal*, August 1847, the following example of this operation.

"Richard, a free man of colour, aged 21 years, had from early childhood been known by his parents to have a very small tumour on the left side of his tongue, near the apex. This tumour had never given any trouble, remaining stationary in size till within a year or two previous to my being consulted. Attention was then called to it by its rapid enlargement, darker colour and strong pulsation, which continued to increase, till, in a short time, by its bulk and extreme sensibility, it materially interfered with mastication and enunciation. During the last two years, it had bled frequently, and of late, the hemorrhage had been so profuse as to threaten the patient's life. When I first saw him, he was pale, anæmic and emaciated to the proportions of a skeleton, as much from starvation as depletion, he not being able to take anything but cold gruel, on account of the enlarged condition and great sensibility of the tongue, as well as its liability to alarming bleeding, if impinged upon. The tongue itself was occupied, on the left side, to the median line, and even encroaching on the right of it, by a strongly pulsating, nodulated tumour of a dark red hue. This filled entirely the buccal cavity on that side, and pressed outward against the teeth, which, by absorption of its tissues from pressure, had caused a deep ulceration from which the bleeding occurred so frequently. Upon pressure, the tumour could be readily much reduced in size, by evacuating its vessels of blood, but this was an experiment of some hazard, on account of its active hemorrhagic tendency. The base of the tongue also participated in the enlargement, especially at its under surface, and from the continued irritation, the neighbouring glands of the mouth were much swollen and painful. The case had been considered cancer of the tongue—had been treated as such, and I was consulted for that disease, and indeed, the whole appearance of the patient strongly simulated that of the carcinomatous cachexia.

"The ulceration on the surface of the tumour was oblong in shape, and covered with dark coagula of the hemorrhages it gave out. The patient had been using astringent washes, to check the bleeding, and at present was under no other treatment. The day after my first visit to this man, I was called to him, in haste, to restrain the profuse hemorrhage from the ulcer, which had caused repeated syncope, and brought him to the extreme of debility. His condition was the following:—Hemorrhage very profuse, and only ceasing during the relaxation of deliquium, which supervened whenever he attempted to rise; pulse almost imperceptible at the wrist; patient of course much alarmed at his condition.

"On consultation with Drs. J. A. and P. F. Eve, ligation was determined upon; and as the most convenient and practicable, we chose the *Primitive Carotid* of

that side, both on account of its more easy access than the external carotid or lingual, and further, because pulsation in it was more appreciable in the exhausted condition of the patient. I performed the ordinary operation in the lower part of the anterior superior surgical triangle, making an incision of nearly three inches, which extended somewhat below the omo-hyoid muscle. The needle and ligature were passed without difficulty, the artery separated from its accompanying nerve and vein, and tied with a piece of saddler's silk. No blood was lost at the wound of the operation, and the *hemorrhage from the tumour ceased immediately.*

"Day after the operation. Pulse, though much improved, still feeble and accelerated on any trivial exertion; tumour on tongue somewhat smaller and quite dark; ulcer covered with clotted blood; little or no pain in the tongue. Prescribed as diet, cold gruel and cold chicken soup.

"Fourth day. Dressed the wound, which had healed by first intention, to within an inch of the ligature—a little healthy pus under the plasters; pulse much improved; tumour considerably flattened; in ulcer, no apparent change. Diet, as before.

"Fourteenth day. Wound in the neck entirely closed, with the exception of a small aperture that gave egress to the end of the ligature,—this was thrown off on the twenty-fifth day—no hemorrhage followed: the noose was entire on the thread. There had been no absorption of the ligature, but it had divided the remaining coat of the artery. A few hours after, I was called in haste to the patient, and found he had lost a small quantity of blood from the wound, though I think it most probably came from the very vascular granulations around the orifice made by the ligature. This healed rapidly without further accident or mishap. The tumour on the tongue had entirely disappeared—the tongue was of its natural colour and volume, except that where the deep ulceration had existed, there were a depression and whitish cicatrix—speech and mastication were performed with facility, and the restoration of the organ seemed complete. General health of the patient better than it had been for several years previous.

"For nearly a year after the operation, the patient continued free from any return of his disease. At the end of that time, he complained of some pain, and there was also slight tumefaction on the opposite side of the tongue. He did not reside in this state, and it was somewhat over three months before I again saw him, during which time (it is by no means strange to relate), he had been under the treatment of various *Charmers, Cancer Doctors* and *Conjurers*. When I did see him, his condition was fully as bad as when he first applied to me. The tumour now occupied both sides of the tongue; having passed from right to left, filled nearly the whole mouth, and had several small ulcerations upon its surface which bled frequently and profusely.

"I proposed the ligation of the other common carotid, to which the patient, but reluctantly, acceded. On consultation, the measure was abandoned as inexpedient. This miserable being died, a few months after, entirely worn out by successive hemorrhages, starvation and hectic irritation."

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Surgical Treatment of Œdema of the Glottis.—Dr. Gordon Buck stated to the New York Medical and Surgical Society, June 5th, last, that it had long ago occurred to him, that in cases of the œdema of the glottis, when suffocation seemed imminent, the patient might be relieved by incising the edges of the glottis and epiglottis. An opportunity having recently occurred, he had had recourse to the practice with decided benefit. The patient suffering under inflammation of the fauces, became affected with dyspnœa, attended with paroxysms of impending suffocation. On passing the finger into the fauces, the epiglottis could be felt enormously swollen and tense. The swelling of the glottis could likewise be distinguished. In the operation, a pair of curved, sharp-pointed scissors was employed, and afterwards, a curved, sharp-pointed bistoury, guarded to within a quarter of an inch of the point. The patient expectorated two or three spoonfuls of blood, mixed with the secretions of the fauces, and expressed himself decidedly relieved. Besides the operation, the patient was bled, leeched, inhaled aqueous vapour, &c. He recovered.

Dr. Clark said, that he thought the suggestion of Dr. B. a highly important one;

the œdematous swelling, in such cases, being principally situated on the posterior surface of the epiglottis, and on the upper and posterior part of the glottis. In this last situation it had a valvular action, rising up during expiration, but closing, and thus impending inspiration. Indeed, the fact that the difficulty occurred only during inspiration, was characteristic of the disease. Dr. C. thought the parts could be safely and easily reached, and that the operation afforded every promise of relief.—*Annalist*, July 15, 1837.

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Animal Ligature.—Dr. W. T. Wragg, in a paper on the use of animal ligatures in the *Southern Journal of Medicine and Pharmacy*, (Sept. 1847,) states that he has been in the habit of using these ligatures for upwards of ten years, and for several years he has used none but these. In the course of this period he has tied the arteries of the fingers, hand, forearm, arm, leg, and thigh,—and he has never seen any symptom result from which he could infer that the knot had not been removed by absorption. From the facts he has observed, he deduces the following inferences. 1st. That the deer sinew ligature, if properly applied, will effectually arrest hemorrhage from vessels even of large size. 2d. That they produce less inflammation of the living tissues with which they are placed in contact during the time they remain as foreign bodies, in these tissues, than other substances. 3d. That they are susceptible of being absorbed and carried away by the action of the living parts in the midst of which they are placed.

The substance Dr. Wragg uses is the deer sinew dried, stripped down and twisted, so as to form a small round thread of smooth and regular surface, inelastic and strong enough to withstand any degree of force that can be applied to it by the fingers in drawing the knot. The manner of preparing these threads Dr. W. considers to be a matter of much importance towards the success or failure of the operation, and he gives the following directions for this purpose: "First, the sinew should be well prepared: which is done by dissecting the hamstring tendon carefully out so as to obtain the greatest length of the fibre. The long tendons running down the leg will answer also, but they are not so easily stripped, and therefore do not give threads of as regular size. These tendons are prepared by long and careful drying, and should never be used till all moisture has disappeared from them. I prefer those which have been several years drying. To strip them down to the proper size, the process should commence at the middle part of the tendon and proceed towards the ends: by this means the entire length of the fibre is obtained, which can seldom be done if the commencement is made at either end. If any difficulty is experienced in tearing the fibres apart, the tendons should be beaten with a hammer, but not so violently as to destroy them. When reduced to a very small size the fibres must be moistened in water and twisted, either alone or two or more together, so as to prepare a thread of the desired size. This is then held in the fingers a few moments and stretched while drying, so as to retain the twist, which will remain permanent after the sinew becomes dry. Ligatures thus prepared should be kept on hand, for they become more and more adapted for their desired use by time. They should not be very large. The size cannot be exactly determined, for it must vary in some degree according to the artery on which it is to be placed. Thus in dissecting out tumours or performing deep operations, when small twigs are constantly springing and embarrassing the operation by filling the parts with blood, it becomes necessary to secure these in order to keep the scene of operations clear to the eye of the operator. Here a very small thread is best. And I would remark, in passing, that it is in these cases that the animal ligatures are eminently adapted to our purposes. The threads are cut close to the knot, and the progress of the operation is not impeded by the hanging ends, no matter how many it may have been deemed necessary to apply. In cases where an artery of some size is to be secured, as after an amputation, it may be better to enlarge the size of the thread a little, for the double purpose of enabling the surgeon to draw the knot with more force, and of making the hold of the thread upon the artery more secure by giving it more surface. I seldom, however, think it necessary to go much beyond the bigness of a packthread or a small sized twine."

INDEX.

A.

Abortion, prevention of, 503
Abscess of bladder, 536
Acetate of morphia, coffee antidote to, 259
Acid nitrate of mercury, 202
Albuminous urine, caused by cantharides, 463
Albuminuria in pregnant women, 505
Alcohol, formation of in system, 259
Alderson, on diseases of stomach and alimentary canal, 429
Alum in pertussis, 218
Amaurosis from encephaloid disease of the brain, 496
Amenorrhœa, local treatment of, 217
————, chenopodium in, 218
Ammonia, death from, 258
Amputation above shoulder-joint, 360
Amussat on effects of inhalations of ether, 261
Aneurism, galvano-puncture in, 243
————, treatment of by compression, 194
Angustura, 453
Animal ligature, 544
Aorta, rigidity of arch of, 224
Aphonia, galvanism in, 468
Aran, iodine and iodide of potassium in syphilis, 243
Arlt, structure of conjunctiva, 497
Arsenic, poisoning with in Cayenne, 258
Arsenious acid, varieties of, 506
Arteria innominata, statistics of ligature of, 13
Arterialization, process of, 447
Articular rheumatism cured by cold applications to affected joints, 263
Ascites cured by iodine injection, 491
Assamese, poisons of, 508
Augusta, report of insane hospital at, 182

B.

Bambrigge, ovarian dropsy, 231
Bardsley, remedy for cramps of lower extremities, 223
Barry, doubtful sex, 123
Baudens, mode of bandaging wounds and stumps, 476
Beck, blisters in young subjects, 538
——, excision of genital organs, 265
Bednar, ischuria neonatorum, 472
Bee, erysipelas phlegmonoides, 405
Begbie, relations of rheumatism and chorea, 464
Bellingham, rigidity of arch of aorta, 225
———— scurvy, 455
———— treatment of aneurism by compression, 194
Bennett, researches on cancer, 225
Benzoate of ammonia in gout, 469
Bifid vagina, 275
Bile, colouring matter of, 450, 451
Binoxide of mercury in skin diseases, 469
Bird, electric moxa, 454
Bishop, physiology of the human voice, 197
Bismuth in diarrhœa, 219
Bitter almonds, essential oil of, 516
Bladder, lacerated wound of, 475
————, abscess of, 536
Blandin, phlegmasia dolens on the male, 217
Blandy, trial of Miss, 255
Bliss, statistics of obstetric practice, 271
Blisters in erysipelas, 489
———— in children, 538
————, dressing of, 451
Blondlot, colouring matter of bile, 450
Blood, character of in cancer, 201
Bloomingdale Asylum, report, 436
Boâ Vista fever, 415
Bohm, strabismus and partial amaurosis from thickening of neurilemma of optic nerve, 248
Boling, physical sign of pneumonia of the apex of the lungs, 125
Boston Lunatic Asylum report, 185
Bouillaud, albuminous urine caused by cantharides, 463
Boyer, compression of epigastrium for hiccup, 455
Bozzi, descent of spleen in pelvis, 245
Brain, wound of, 473
Bromide and iodide of potassium, comparative value of, 206
Bronzing confectionary, 508
Brown on cretans and idiots, 109
Brulet, hypertrophy of septum nasi, 489
Buck, œdema of glottis, 543
Buckingham, partial occlusion of os uteri, 400
Budd, cynanche laryngea, 221
Bully, treacle in burns, 489
Burd, ovarian tumour complicated with pregnancy removed, 236
Burns, cold water for cure of, 488
——, treacle for cure of, 489
Burrows, on tubercular pericarditis, 219
Bushnan, operation for pseudarthrosis, 477
Bussy, varieties of arsenious acid, 506

C.

Campbell, ligature of primitive carotid, 542
Canada Asylum report, 436
Cancer, pathological researches on, 225
Cantharides, albuminous urine caused by, 463
Carcinomatous tumour of kidney, 266
Carotid, ligature of common, 264
Carotid arteries, statistics of ligature of, 13
Carson's illustrations of medical botany, 177
Cervix uteri, treatment of inflammatory induration of by deep cauterization with potassa fusa, 471
Challeton, sulphuric ether in intermittent ever, 468
Chevallier on ergot, 253
———, effects of vapour of phosphorus on workmen, 253
Chevers, on cyanosis, 207
Child, on indigestion, 181
Children, fracture of skull in, 269
Chorea, relations of rheumatism with, 464
Ciliary processes, structure and functions of, 393
Circulation, influence of gravity on, 472
Citrate of magnesia, 452
Clarke, strychnine in chronic bronchitis, 275
Coffee, antidote to acetate of morphia, 259
Coke and Woodburn case, 256
Cold water in severe burns, 488
Compression of epigastrium for the cure of hiccup, 455
Conjunctiva, structure of, 497
Constipation, Dick on, 465
Cooper, trial of, 255
Coote, mercurial action not a preventive of secondary syphilis, 246
Coote and Taylor's experiments on effects of inhalation of ether, 513
Copeman, ill effects of ether, 514
Cord, prolapsus of, terminating favourably without interference, 252
Cornea, opacities of, 247
———, tetanus from lacerated wound of, 475
Coste, membrana decidua, 502
Cramps of lower extremities, remedy for, 223
Creatine, its office, 200
Cretins and idiots, education of, 109
Croup, tracheotomy in, 491
Cumming, luminous appearance of the human eye, 248
Cusparia, 453
Cutaneous eruptions produced by medicines, 220
Cyanosis, causes of, 207
Cynanche laryngea, 221
Cystitis, treatment of chronic, by injections of nitrate of silver, 481

D.

Dalrymple, malignant diseases of eye, 495
———, amaurosis from encephaloid disease of brain, 496
Datura sanguinea, 260
Daureol, substitute for ether vapour, 207
Davies, alum in pertussis, 218
———, ligature of external iliac artery, 245
Delabarre, citrate of magnesia, 451
Delivery through an extremely deformed pelvis, 497
Devilliers, albuminuria in pregnant women, 505
Diarrhœa, bismuth in, 219
Diarsenite of quinine, 454
Dickson, bifid vagina, 275
Dick on constipation, 465
—— on cusparia, 453
Dieffenbach's operation for pseudarthrosis, 477
Dislocation, vertical, of patella, 479
———, partial, of humerus and femur, 481
Dissection wounds, treatment of, 476
Doubtful sex, 121
Douglas' case, 255
Dubois, spontaneous amputation, 253
Ductus choledochus, fungous growth round orifice of, 466
Dupuytren, partial dislocation of humerus and femur, 481

E.

Egar, comparative value of bromide and iodide of potassium, 206
Electric moxa, 454
Electricity, its effects on the human organism, 468
Encephaloid disease of brain, amaurosis from, 496
Endemic gastro-follicular enteritis, 40
Ergot, its effects on the parturient female and her offspring, 253
Erysipelas phlegmonoides, 405
———, linear blisters in, 489
Essential oil of bitter almonds, 510
Ether, effects of inhalation of, 261
———, feigned diseases detected through inhalation of, 262
———, physiological effects of, 204
———, substitute for, 207
——— vapour enemata, 205
——— inhalation as a means of annulling pain, 512
———, rules for administering and precautions to be used, 512
———, physiological action of, 513
———, its employment in surgery, 514
———, its employment in midwifery, 518
———, present state of opinion regarding, 525
———, morbid appearances after death from, 516
———, opinions respecting use of, 526
Expectoration of diabetic patients, sugar in, 212
External iliac artery, ligature of, 245
Eye, Lawrence's treatise on, 196
—, luminous appearance of, 248
—, malignant diseases of, 495
—, scrofulous inflammation of, 492

F.

Feigned diseases, 262
Femoral aneurism, 535

Femur, partial dislocation of, 481
Ferrers, Earl, trial of, 254
Fosgate, case of Wm. Freeman, 409
Foramen ovale, hernia strangulated in, 242
Fracture of humerus through bicipital groove, 477
Francis, detection of sugar in expectoration of diabetic patients, 212

G.

Galvanism in aphonia, 468
Galvano-puncture in aneurism, 243
Gecko, 254
Genital organs, excision of, 265
Gerdy, influence of gravity on circulation and local inflammation, 472
Gibson, operations for femoral aneurism, 535
Gilbert, amputation above shoulder-joint, 360
Gintrac, wound of brain, 473
Gloninger, carcinomatous tumour of kidney, 266
Glover on scrofula, 167
Gosselin, obliteration of spermatic ducts, 467
Gout, benzoate of ammonia in, 469
Gravity, influence of on circulation and local inflammation, 472
Griffin, prevention of abortion, 503
Griffith's Medical Botany, 163
Grindley, essential oil of bitter almonds, 510
Guersant, tracheotomy in croup, 491

H.

Hake, prolapsus ani, 487
Hallowell, gastro-follicular enteritis, 40
———, cases illustrating the natural history of tubercular diseases, 440
Hamilton, fracture of skull in, 269
Harden, isopathia, 339
Hargrave, treatment of dissection wounds, 476
Harris, doubtful sex, 121
Hartford Retreat for the Insane, report, 186
Hartshorne on hydropathy, 444
Hays' operation for symblepharon, 263
Headache, varieties of, 459
Heller, characters of blood in cancer, 201
Hemorrhage from umbilical vessels, 504
Hernia, strangulated in foramen ovale, diagnosis of, 262
———, radical cure of, 402
Hertzveld, some appearances in purulent poisoning of the blood, 214
Hewett, wound of rectum and bladder, 475
Heylen, obliquity and increased length of septum nasi, 490
Hiccup, compression of epigastrium for cure of, 455
Houlton, chenopodium in amenorrhœa, 218
Humerus, partial dislocations of, 481
Hydrated peroxide of iron, changes of when kept in water, 259
Hydrotherapy, 75

I.

Iberis amara, 453
Ibreisle, binoxide of mercury in skin diseases, 469
Idiots, education of, 109, 442
Indiana Hospital for Insane, report, 193
Indigestion, Child on, 181
Induration, inflammations of cervix uteri, treated by deep cauterization, 471
Infanticide in Madagascar, 261
———, 507
Inflammation, opium in, 461
Insane hospital reports, 182, 436
Insoluble substances, entrance of from intestines into blood-vessels, 448
Intermittent fever, sulphuric ether in, 468
Iodine, tincture of in intermittent fever, 223
———, injection into peritoneal cavity, 491
Ischuria neonatorum, 472
Isopathia, 339

J.

Jacob, scrofulous ophthalmia, 492
———'s essays, 445
Jansen, pathological anatomy of perichondritis laryngea, 213
Jaundice, obstruction of orifice of ductus choledochus, 466
Jobert's operation for vesico-vaginal fistula, 484

K.

Keiller, spontaneous evolution, 503
———, fatal hemorrhage from umbilicus, 504
Kelley on yellow fever, 373
Kentucky Lunatic Asylum, 192
Kidney, subacute inflammation, 463
Kingdon, diarsenite of quinine, 454
Kneeland on hydrotherapy, 75
Kusten, cold water in severe burns, 488

L.

Larynx, acute œdematous inflammation of, 221
Lawrence, treatise on the eye, 196
Ledoyen's disinfecting fluid, 511
Legrand, local treatment of amenorrhœa, 217
Leriche, ascites cured by iodine injection into peritoneal cavity, 491
Letheby, poisoning by turpeth mineral, 508
Liebig, creatine, 200
———, new test for prussic acid, 506
Ligature of carotid arteries and arteria innominata, 13
——— of external iliac artery, 245, 535
——— of common carotid, 264
——— of primitive carotid artery, 562
Littrow, effects of sudden changes of temperature, 220
Local inflammation, influence of gravity on, 472
Luminous appearance of human eye, 268

M.

Maclagan, dressing of blisters, 452

Madagascar, infanticide in, 261
Massachusetts State Lunatic Asylum report, 185
————, births, deaths, marriages, &c., in, 439
McCoy, inversion of uterus successfully treated, 275
McDonnell, chronic cystitis, 481
McLean Asylum for the Insane, report, 184
McWilliams, report on the fever of Boâ Vista, 415
Medical Botany, Griffith's, 163
————, Carson's, illustrations of, 177
Mediastinitis, 223
Membrana decidua, formation and structure of, 199
————, 502
Mercurial sore, diagnosis of, 245
———— action not a preventive of secondary symptoms, 246
Mercury, acid nitrate of, 202
———— detected in pus of bubo, 451
Metcalf, statistics in midwifery, 295
Metscherlich, formation of alcohol in system, 259
Mettauer, vesico-vaginal fistula, 117
Michel, early human ovum, 330
———, structure and functions of ciliary processes, 393
Mojon, death from impermeable covering of skin, 447
Monterey, medical account of battle of, 266
Mount Hope Institute report, 190
Mucous membrane of stomach, softening of, 259

N.

National Medical Convention, proceedings of, 196
Nervous system, researches on, 449
New Hampshire Asylum report, 436
New York State Lunatic Asylum report, 187
Nicotine, 253
Nitrate of silver, treatment of cystitis by injections of, 481
Norris, statistics of ligature of carotid arteries and arteria innominata, 13
Nott, health and longevity of the southern seaports, 178
——, radical cure of hernia, 402

O.

Obstetrics, statistics of, 271, 295
Œdema of glottis, 543
Oesterlen, entrance of insoluble substances into the blood, 448
Ohio Lunatic Asylum report, 191
Opium in inflammation, 461
Orr, tracheotomy, 239
Osteo-sarcoma of lower jaw, 370
Os uteri, partial occlusion of, 400
Ovarian dropsy, 231
———— tumour complicated with pregnancy, removed, 236
————, extirpation of, 483
Ovum, very early, 330

P.

Palfrey's report of births, &c., in Massachusetts, 439
Pallas, effects of electricity on human organism, 468
Pardee's cases of scarlatina, 127
Patella, vertical dislocation of, 479
Payen, vertical dislocation of patella, 479
Pennock, frequency of the pulse and respiration in the aged, 68
Pennsylvania Hospital for Insane, report, 189
Perichondritis laryngea, pathological anatomy of, 213
Peritoneal cavity, injection of iodine in, 491
Pertussis, alum in, 218
Peruvian bark, 203
Pfaff, solium temulentum, 258
Pfeufer on mediastinitis, 223
Philadelphia College of Physicians, transactions of, 440
Phlegmasia dolens in the male, 217
Phosphorus, effects of vapour of on workmen, 253
Physiology, Reese's analysis of, 193
Pickford, injurious effects of ether, 515
Piorry, blisters in erysipelas, 489
Pirogoff, ether vapour enemata, 205
Pneumonia of apex of lungs, physical sign of, 125
Pneumogastric nerves, functions of, 198
Poisoned weapons of Peruvian Indians, 260
Poisoning, 508
Polli, colouring matter of bile, 451
Pollock, tetanus from lacerated wound of cornea, 475
Porter, diagnosis of mercurial sore, 245
Prolapsus ani, new treatment of, 487
Prussic acid, new test for, 506
Pseudarthrosis, Dieffenbach's operation for, 477
Pulse and respiration, frequency of in the aged, 68
Purulent infection, 491
Pus of bubo, detection of mercury in, 451
Pym's letter on fever of Boâ Vista, 415

Q.

Quinine, its influence on volume of spleen in ague, 470

R.

Rainey, anatomy and physiology of the vascular fringes in joints and sheaths of tendons, 198
Ranking, opium in inflammation, 461
———, ether in tetanus, 518
Rayer, bismuth in diarrhœa, 219
Rectum, lacerated wound of, 475
Red corpuscles of blood function, 447
Red pepper, 202
Rees, function of red corpuscles of blood, 447
Reese, analysis of physiology, 193
Regnault, albuminuria, 505
Rhatany, 203

Rheumatism, relations with chorea, 464
————, treacle as a local remedy in, 470
Robert, salivary calculus, 490
Robin, researches on nervous system, 449
Roeser, diagnosis of hernia strangulated in foramen ovale, 242
Rognetta, use of starch bandages, 241
Rostan, compression of epigastrium for cure of hiccup, 455
Ruschenberger, acute articular rheumatism cured by cold applications to joints, 263

S.

Salivary calculus, 490
Sandras, functions of pneumogastric nerves, 198
Sargent, typhus fever, 529
Scarlatina, cases of, 127
Schloesing, nicotine, 253
Scrofula, Glover on, 167
Scrofulous ophthalmia, 492
Scurvy, 455
Sea moss, as a bandage for fractures, 204
Sedillot, purulent infection, 491
Seguin, tincture of iodine in intermittent fever, 223
Selberg, poisoning in Java, the gecko, 254
Septum nasi, hypertrophy of, 489
————, obliquity and increased length of, 490
Seymour, benzoate of ammonia in gout, 469
Shipman, ligature of common carotid for removal of the parotid gland, 264
Shoulder-joint, amputation above, 360
Simon, subacute inflammation of kidney, 463
Simpson, deep cauterizations for cure of inflammatory induration of cervix uteri, 471
————, delivery through an extremely deformed pelvis, 497
————, hemorrhage from umbilical vessels, 504
————, fungus from umbilicus in infants, 504
————, use of ether in obstetric practice, 519, 520
Simms, osteo-sarcoma of lower jaw, 370
Singultus, compression of epigastrium for cure of, 455
Skin diseases, binoxide of mercury in, 469
——, death from impermeable covering of, 447
Skull, fracture of in children, 269
Smith, fracture of upper extremity of humerus traversing the bicipital groove, 477
——, ether in midwifery, 525
Softening of mucous membrane of stomach, 259
Solium temulentum, 258
Spermatic ducts, obliteration of, 467
Spleen, descent of in pelvis, 245
————, influence of quinine on volume of, 470
Spontaneous amputation, 253
———— evolution, 503
Starch bandages, use of, 241
Statistics, midwifery, 271, 295
Statistics of ligature of carotid arteries and arteria innominata, 13
Stokes, jaundice—fungous growth round orifice of ductus choledochus, 466
Stomach, Alderson on diseases of, 429
Strabismus, causes of, 248
————, and partial amaurosis, 248
Strychnine in chronic bronchitis, 275
Stumps, new mode of bandaging, 476
Sublingual tumour, 490
Sugar, detection of in expectoration of diabetic patients, 212
Sulphuric ether in intermittent fever, 468
Summer complaint of children, 40
Sylvester, on iberis amara, 453
Symblepharon, operation for, 246, 263
Syphilis, iodine and iodide of potassium in, 243

T.

Temperature, effects of sudden changes of, 220
Tetanus from lacerated wound of cornea, 475
————, ether in, 518
Thyroid gland, death from hypertrophy of, 471
Tongue, semeiology of, 460
Tracheotomy in croup, 491
————, 239
Treacle as a local remedy in rheumatism, 470
———— in burns, 489
Trials, remarkable English, 254
Tschudi, datura sanguinea, 260
————, Peruvian bark, 203
————, poisoned weapons of the Peruvian Indians, 260
————, red pepper, 202
————, rhatany, 203
————, sea moss as a bandage for fractures, 204
Tubercular pericarditis, 219
———— diseases, natural history of, 440
Turnbull, abscess of bladder, 536
Turpeth mineral, poisoning with, 508
Typhus fever, 529

U.

Umbilical vessels, hemorrhage from, 504
Umbilicus, fungus from, 504
Unborn child recognized by the law, 257
Uterus, inversion of, 275

V.

Vagina, bifid, 275
Valerianate of zinc, 202
Valleix on influence of quinine on volume of spleen, 470
Vascular fringes in joints and the sheaths of tendons, 198
Vesico-vaginal fistula, 484
Vermont Asylum for the Insane, report, 183
Ville, influence of ether on inhalation, 514
Vines, treacle a local remedy in rheumatism, 470

Virginia Western Asylum report, 191
Voice, physiology of the, 197

W.

Water, and its true relations to medicine, 466
Watson's Practice of Physic, 445
Wharton's duct, dilatation of, 490
Wilde, symblepharon, 246
——, opacities of cornea, 267
Wittstein, changes effected in hydrated peroxide of iron when kept in water, 259
Wood's Practice of Medicine, review of, 133
Woodhouse, prolapsus of cord terminating favourably without instrumental interference, 252
Wounds, Bauden's mode of bandaging, 476
Woyeikowski, extirpation of ovarian tumour, 483
Wragg, animal ligature, 544
Wright, varieties of headache, 459
——, semeiology of tongue, 460

Y.

Yellow fever, 373

Z.

Zinc, valerianate of, 202

UNIVERSITY OF PENNSYLVANIA, MEDICAL DEPARTMENT.

SESSION OF 1847–48.

The Medical Lectures will commence on Monday, October 18th, and be continued to the end of March ensuing.

Theory and Practice of Medicine, - - -	By NATHANIEL CHAPMAN, M.D.
Surgery, - - - - - - - - -	" WILLIAM GIBSON, M. D.
Anatomy, - - - - - - - - -	" WILLIAM E. HORNER, M. D.
Institutes of Medicine, - - - - -	" SAMUEL JACKSON, M. D.
Materia Medica and Pharmacy, - - - -	" GEORGE B. WOOD, M. D.
Obstetrics and the Diseases of Women and Children,	" HUGH L. HODGE, M. D.
Chemistry, - - - - - - - -	" JAMES B. ROGERS, M. D.

Clinical Instruction at the Pennsylvania Hospital, by G. B. WOOD, M. D., on Medicine; and by JACOB RANDOLPH, M. D., on Surgery.

Demonstrative Instruction in Medicine and Surgery, twice a week, by the Professors of the Medical Faculty, assisted by W. W. GERHARD, M. D., and H. H. SMITH, M. D.

Preliminary Lectures will be delivered from the 4th to the 16th of October, inclusive.

The rooms for Practical Anatomy will be open from October 1st to the end of March, JOHN NEILL, M. D., Demonstrator.

Amount of Fees for Lectures in the University, $105; Matriculating Fee (paid once only), $5; Hospital Fee, $10; Practical Anatomy, $10; Graduating Fee, $30.

The Commencement will take place at the usual period, early in April.

W. E. HORNER, M. D., *Dean of the Medical Faculty.*

No. 386 Chestnut Street, above Thirteenth, opposite the U. S. Mint, Philadelphia.

September 24th, 1847.

MASSACHUSETTS MEDICAL COLLEGE.

The Medical Lectures of Harvard University will commence on the first Wednesday in November, at the new Medical College in Grove Street, Boston, and continue four months.

Theory and Practice of Medicine by JOHN WARE, M. D.

Obstetrics and Medical Jurisprudence by WALTER CHANNING, M. D.

Chemistry by JOHN W. WEBSTER, M. D.

Surgery by GEORGE HAYWARD, M. D.

Anatomy and Physiology by OLIVER W. HOLMES, M. D.

Pathological Anatomy by JOHN B. S. JACKSON, M. D.

Materia Medica and Clinical Medicine by JACOB BIGELOW, M. D.

The fees for the whole course are collectively, $80. Matriculation, $3; Dissecting Ticket, $5; Graduation, $20. Admission to the Hospital and use of the Library are gratuitous.

The New Medical College in Grove Street has lately been erected at great expense, and is now complete. It is of ample dimensions, and contains, besides its lecture rooms, a very extensive museum of Healthy and Pathological Anatomy, Surgery, Midwifery, Materia Medica, and a complete Chemical Laboratory.

The Massachusetts General Hospital is now one of the largest, best endowed and best arranged institutions in the United States. Four of the Professors in the University are also physicians or surgeons of the Hospital, so that regular clinical instruction is given, and all the surgical operations are open to the medical students during the lectures and throughout the year.

BOSTON, *July*, 1847.

JEFFERSON MEDICAL COLLEGE.

SESSION OF 1847-8.

The regular Course of Lectures will commence on Monday, the first of November.

ROBLEY DUNGLISON, M. D., Professor of Institutes of Medicine.
ROBERT M. HUSTON, M. D., Professor of Materia Medica and General Therapeutics.
JOSEPH PANCOAST, M. D., Professor of General, Descriptive and Surgical Anatomy.
JOHN K. MITCHELL, M. D., Professor of Practice of Medicine.
THOMAS D. MUTTER, M. D., Professor of Institutes and Practice of Surgery.
CHARLES D. MEIGS, M. D., Professor of Obstetrics and Diseases of Women and Children.
FRANKLIN BACHE, M. D., Professor of Chemistry.
ELLERSLIE WALLACE, M. D., Demonstrator of Anatomy.

Every Wednesday and Saturday in the month of October, and during the Course, Medical and Surgical cases will be investigated, prescribed for, and lectured on before the class. During the past year more than eight hundred cases were treated, and two hundred operated on. The Clinical Lectures are so arranged as to permit the student, should he desire it, to attend the Medical and Surgical practice and Lectures at the Pennsylvania Hospital. After the first of October, the Dissecting Rooms of the College will be open under the direction of the Professor of Anatomy and the Demonstrator.

The number of Students during the last Session was 493; and of graduates 182.

R. M. HUSTON, M. D., *Dean of the Faculty,*
No. 1 *Girard Street.*

ALBANY MEDICAL COLLEGE.

THE next Annual Course of Lectures will commence on the first Tuesday of October, and will continue sixteen weeks.

ALDEN MARCH, M. D., Prof. of Surgery.
T. ROMEYN BECK, M. D., Prof. of Materia Medica.
JAMES MCNAUGHTON, M. D., Prof. Theory and Practice of Medicine.
LEWIS C. BECK, M. D., Prof. Chemistry.
EBENEZER EMMONS, M. D., Prof. Obstetrics and Natural History.
JAMES H. ARMSBY, M. D., Prof. Anatomy.
THOMAS HUN, M. D., Prof. Institutes of Medicine.
AMOS DEAN, Esq., Prof. Medical Jurisprudence.

The fees for a full course of lectures are $70. The Matriculation fee is $5; Graduation fee, $20.

During the month of September the Faculty will deliver two lectures daily, to which students who have matriculated will be admitted without additional charge. As these lectures do not make part of the regular annual course, attendance on them will not be exacted for graduation.

Those who wish for further information, or for circulars, will address a letter (post paid) to the Registrar.

July 1, 1847. THOMAS HUN, *Registrar.*

UNIVERSITY OF MARYLAND.

FACULTY OF PHYSIC—SESSION OF 1847-8.

The Lectures will commence on Monday, October 25th, and continue until the 1st of March ensuing.

RICHARD WILMOT HALL, M. D., Obstetrics and Medical Jurisprudence.
WM. E. A. AIKIN, M. D., Chemistry and Pharmacy.
NATHAN R. SMITH, M. D., Surgery.
SAMUEL CHEW, M. D., Therapeutics, Materia Medica, and Hygiene.
JOSEPH ROBY, M. D., Anatomy and Physiology.
WM. POWER, M. D., Theory and Practice of Medicine.
GEO. W. MILTENBERGER, M. D., Demonstrator of Anatomy.

Instruction in Clinical Medicine and Clinical Surgery every day at the Baltimore Infirmary opposite the Medical College.

Fees for the entire course, $90; Matriculation fee, $5; Graduation fee, $20; Clinical ticket free; Dissecting ticket optional with the student.

WM. E. A. AIKIN, M. D., *Dean of the Faculty.*

BALTIMORE, *July* 1, 1847.

PENNSYLVANIA MEDICAL COLLEGE.

FILBERT STREET ABOVE ELEVENTH, PHILADELPHIA.

The Annual Course of Instruction for the Session of 1847–48, will commence on Monday, November 1st, and be continued until the ensuing 1st of March, under the following arrangement:—

Principles and Practice of Medicine,	By	Wm. Darrach, M. D.
Obstetrics and Diseases of Women and Children,	"	John Wiltbank, M. D.
Materia Medica and Therapeutics,	"	Henry S. Patterson, M. D.
Anatomy and Physiology,	"	Wm. R Grant, M. D.
Principles and Practice of Surgery,	"	David Gilbert, M. D.
Medical Chemistry,	"	Washington L. Atlee, M.D

The Anatomical Rooms will be opened on the 1st of October, under the direction of Prof. Grant, assisted by A. F. M'Intire, M. D., Demonstrator of Anatomy.

Pupils in attendance upon a Second Course of Lectures are provided with Tickets of admission to the Clinic of the Pennsylvania Hospital, Pine Street.

Fees.—Matriculation, $5; for each Ticket, $15; Graduation, $30.

HENRY S. PATTERSON, M. D., *Registrar,*
No. 94 Arch Street.

COLLEGE OF PHYSICIANS AND SURGEONS, OF THE UNIVERSITY OF THE STATE OF NEW YORK.

The Forty-first Session of the College will be commenced on Monday, 18th October, 1847, and continued until the second Thursday in March, 1848.

Alexander H. Stevens, M. D., President of the College and Emeritus Professor of Clinical Surgery.

Joseph M. Smith, M. D., Professor of the Theory and Practice of Medicine and Clinical Medicine.

John B. Beck, M. D., Professor of Materia Medica and Medical Jurisprudence.

John Torrey, M. D., LL. D., Professor of Botany and Chemistry.

Robert Watts, jun., M. D., Professor of Anatomy.

Willard Parker, M. D, Professor of the Principles and Practice of Surgery.

Chandler R. Gilman, M. D., Professor of Obstetrics and the Diseases of Women and Children.

Alonzo Clark, M. D., Lecturer on Physiology and Pathology (including Microscopy).

Gustavus A. Sabine, M. D., Demonstrator of anatomy.

FEES.—Matriculation Fee, $5; Fees for the full Course of Lectures, $108; Demonstrator's Ticket, $5; Graduation Fee, $25; Board, average $3 per week.

Clinical Instruction is given at the New York Hospital daily, by the Medical Officers, (Professor Smith being one of them,) fee $8 per annum; at the Eye Infirmary, without fee; and upwards of 1000 patients are annually exhibited to the class in the College Clinique. Obstetrical cases and subjects for Dissection are abundantly furnished through the respective departments.

The Annual Commencement is held on the second Thursday in March; there is also a Semi-annual Examination in September. The requisites for Graduation are, —21 years of age, three years of Study, including two full Courses of Lectures, the *last* of which must have been attended in this College, and the presentation of a Thesis on some subject connected with Medical Science.

In addition to the regular course, and not interfering with it, a Course of Lectures will be commenced on Monday, 27th September, and continued until 18th October, viz.—

Hygiene,	By	Dr. Smith.
Medical Botany,	"	Dr. Torrey.
Hernia,	"	Dr. Watts.
Treatment of Infantile Diseases,	"	Dr. Gilman.
Physiology of the Blood,	"	Dr. Clark.

This Course will be *free* to the *Matriculated* Students of the College.

R. WATTS, M. D., *Secretary to the Faculty.*
College of Physicians and Surgeons, 67 Crosby Street, New York.

FRANKLIN MEDICAL COLLEGE.

The regular Lectures of this Institution will commence on the first day of next November.

Paul Beck Goddard, M. D., *Anatomy and Histology.*
C. C. Van Wyck, M. D., *Principles and Practice of Surgery.*
David Hunter Tucker, M. D., *Principles and Practice of Medicine.*
John Barclay Biddle, M. D., *Materia Medica and Therapeutics.*
Wm. Byrd Page, M. D., *Obstetrics and Diseases of Women and Children.*
Levin S. Joynes, M. D., *Physiology and Legal Medicine.*
Robert Bridges, M. D., *General and Organic Chemistry.*
John Barclay Biddle, M. D., *Dean of the Faculty.*
Robert P. Thomas, M. D., *Demonstrator of Anatomy.*

Fees.—For each of the seven Courses of Lectures, $15. Matriculation Fee, to be paid once only, $5. Diploma Fee, $10.

September, 1846.

PHILADELPHIA COLLEGE OF MEDICINE.

The Second Course of Lectures in this Institution will commence on Monday, November 1st, 1847, and be continued until the end of February, 1848, by the following Faculty:—

James M'Clintock, M. D., General, Special and Surgical Anatomy.
J. R. Burden, M. D., Materia Medica and Therapeutics.
D. Perkira Gardner, Chemistry and Medical Jurisprudence.
Henry Gibbons, M. D., Institutes and Practice of Medicine.
James M'Clintock, M. D., Principles and Practice of Surgery, for this Session.
Louis H. Beatty, M. D., Obstetrics and Diseases of Women and Children.
Samuel R. M'Clintock, M. D., Demonstrator of Anatomy.
D. J. M'Kibbin, M. D., Prosector of Surgery.

Fees for the full Course, $75, or $12 50 for each ticket; Fee for those who have attended two full courses in other Colleges, $40; Matriculation, to be paid once only, $5; Graduation, $20; Practical Anatomy, including Recapitulatory Lectures, $10.

The Dissecting Rooms will be open on the 1st of October. The Professor of Chemistry will give a preliminary course in October. The Professor of Anatomy and Surgery will Lecture every day during the same month on Surgical Anatomy and Operative Surgery.

For further information inquire of

JAMES M'CLINTOCK, M. D., *Dean,*
No. 1 *North Eleventh Street.*

TRANSYLVANIA UNIVERSITY.

MEDICAL DEPARTMENT.

The Twenty-eighth Session will open on the first Monday in November next, under the direction of the following Faculty—viz:

Benj. W. Dudley, M. D., Professor of the Principles and Practice of Surgery.
Thos. D. Mitchell, M. D., Professor of Materia Medica and Therapeutics.
Robt. Peter, M. D., Professor of Chemistry and Pharmacy.
James M. Bush, M. D., Professor of Special and Surgical Anatomy.
——— ———, M. D., Professor of General and Pathological Anatomy and Physiology.
Samuel Annan, M. D., Professor of Obstetrics and the Diseases of Women and Children.
Elisha Bartlett, M. D., Professor of Theory and Practice of Medicine.
E. L. Dudley, M. D., Demonstrator of Anatomy.

The cost of a full course is, one hundred and five dollars, invariably in advance, in notes of good and solvent banks of the states whence the pupils come. The Matriculation and Library ticket is Five dollars, par money. The dissecting ticket is ten dollars. Clinical instruction gratis to the candidates for graduation. Boarding and lodging, including lights, at from $2 to $3 per week.

ROBERT PETER, M. D,
Lexington, Ky., July 1st, 1847. Dean of the Faculty.

EXTRACT OF BUCHU.

This plant has been found by extensive experience from some of the most eminent physicians of this country and Europe, to be a safe and valuable remedy in most complaints of the *Urinary Organs, particularly Gravel, Chronic Inflammation of the Bladder and Urethra, Retention or Incontinence of Urine.* It has also been recommended in Chronic Rheumatism and Cutaneous Diseases. It is a native of Good Hope, and the natives have long used the leaves for a variety of diseases.

CARPENTER'S COMPOUND FLUID EXTRACT OF BUCHU.—(*Diosma Crenata.*)—In order that physicians may have a uniform preparation of this valuable medicine, made in a careful manner, with proper proportions and specific doses adapted to the diseases, George W. Carpenter is pleased to announce his Compound Extract of Buchu, which he recommends to the medical profession as a concentrated preparation of this article, and the most convenient mode in which it can be exhibited, and which will obviate the necessity of preparing the decoction, which is always attended with trouble and expense, and always differs more or less in strength, according to the mode of preparation which different individuals adopt, and not unfrequently much impaired, if not totally rendered inert, by the injudicious and unskilful management of those unacquainted with pharmaceutical preparations. This preparation will, therefore, overcome all these difficulties, and being of uniform strength, and ready prepared for the patient, can be administered with more certainty of success by the practitioner, and with less trouble and expense to the patient.—Under these circumstances this medicine has been prepared expressly for the use of the faculty, and will no doubt receive their approbation and encouragement.

Among various highly satisfactory accounts of the value of the Buchu in diseases of the bladder, obstructions of urine, chronic gonorrhœa, gleets of long standing, &c., I will quote a few cases and remarks of Dr. Ephraim McDowell, a highly distinguished physician and member of the Royal College of Surgeons in Ireland, published in the Transactions of the King and Queen's College of Physicians.

A variety of remedies have been advised, says Dr. McDowell, for chronic inflammation of the bladder, &c., which, when neglected, extends to the urethra and kidneys, producing a train of severe local as well as constitutional symptoms. Its original cause frequently cannot be discovered in many cases; we will, however, find it frequently succeeding to mismanaged gonorrhœa, neglected retention of urine, diseases of the prostate gland, strictured urethra, or calculous affections.

In some cases, as, for example, when it depends on diseases of the prostate gland, we can do little more than palliate urgent symptoms; in other instances much may be effected.

A variety of remedies have been advised for these diseases; most of them I have repeatedly tried with little or no effect, beyond that of being in some degree palliative. The Compound Buchu having been lately strongly recommended, I was induced to make trial of it, and my experiments have resulted in the most satisfactory manner, having succeeded in saving the most inveterate cases, in which I had no hopes of success. I will quote a few for example.

Case First.—The first case in which I used it, was apparently a hopeless one, recommended to me by a medical friend in December, 1821. James Thompson, æt. ——, upwards of six years ill, emaciated and greatly debilitated; lower extremities paralytic. When he passed his urine it was generally either with great difficulty, from its being loaded with a large quantity of slimy, tenacious and stringy matter, or else involuntarily. His bowels were habitually costive, appetite totally gone. He had been under the care of so many medical practitioners, without the least benefit, that I feared little could be done for him. I passed a bougie in the first instance, to ascertain the state of the urethra, which I found rather irritable. I also used several of the common remedies for irritable bladder with no effect, at the same time closely attending to the state of the digestive organs; lastly I gave the compound Buchu, which gave immediate relief. In six days after I found his appetite and strength improved, able to walk firmly, the mucus much diminished in quantity, capable of retaining his urine some hours, and no longer passing it involuntarily. His own words to a medical friend were nearly the following:—

"Instead of being disturbed every five minutes during the night by painful erections, or by the desire of making water, I can sleep some hours at a time; no involuntary passing of urine. I can walk stoutly through my room and even up stairs without help; my appetite is excellent; the heartburn gone; the sediment in the urine greatly diminished. I feel a strength in my back and loins unknown to me for years." He continued to improve for a considerable time, but being unable to obtain any more of

the Buchu, he in some degree relapsed; his condition, however, infinitely improved, and a short further continuance of the Buchu would restore him to entire health.

Case Second.—Philip Dwyer, aged sixty-seven years, sallow complexion, emaciated, ill for three years; complains of severe pain in the pubic region, particularly before he passes water. Great irritability of bladder, passing water in small quantities every quarter or half an hour during the night; during the day can occasionally retain it for two or three hours. Less irritability when using much walking exercise; when sitting, is affected with a stinging or scalding sensation in the prostate region. Urine generally white or muddy. Frequently passes a large quantity of slimy, pale-yellow coloured mucus, voided with great difficulty, and soon putrefying; is much relieved by its expulsion from the bladder. Is greatly debilitated, and has lost much weight. Tongue loaded with yellowish mucus. Thirst. No appetite. Bowels generally constipated. No enlargement of the prostate gland could be felt.

Previous History.—Never had gonorrhœa. Has been a temperate liver. The disease commenced three years ago, first with slowness and difficulty in passing water, which was followed by frequent micturition. He attended the Talbot Dispensary for five months, and left town apparently cured. He relapsed, however, in a month, and returned to the dispensary, May 13, 1822. He was ordered to a pint of the Aqua Calcis daily, twenty drops of the muriated tincture of iron three times daily, an opium suppository (three grains) every night, and purgative pills to be taken occasionally.

May 24. Up five times last night to pass water; slime in less quantity; can expel his urine with more force.

May 29. Worse; up fifteen times last night. The slime has not been discharged for some days; since its stoppage great irritability of the bladder has existed. Prescribed the Buchu, and continued the use of muriated tincture of iron.

May 31. Reports that he has been better for the last two nights than for years previous. Passed a large quantity of slime yesterday, which came away readily. Up but four times last night.

June 7. Continues better.

June 9. Great irritability of the bladder. A painful swelling in his pubic region; no mucus discharged for some days. This relapse arose from not being able to procure the Buchu during the last week. The Buchu repeated as before, also the muriated tincture of iron.

June 21. Much better. The slime was discharged after taking the medicine twice; up but twice last night.

The Buchu continued as before.

July 5. Continues mending.

August 4. Called on me to say he continues well, and has been able to follow his ordinary occupation as a labourer for the last month, and considers himself radically cured.

Case Third.—Henderson Waters, a debilitated and emaciated man, aged thirty-one years, visited me August 4, 1822, with my friend, Dr. Cumming. Found him labouring under much fever. Urine dribbling almost constantly from him, or else passing it in the quantity of half an ounce every five minutes; the urine loaded with slime; lower extremities totally paralyzed, the upper nearly so. His lower limbs rigid, and frequently jerked up under him by painful spasms; severe pains in the soles of his feet; much irritability of the rectum. The glans penis in a state of slough, from keeping it constantly immersed in the urinal. The last dorsal vertebra more prominent than usual; no pain caused by its forcible pressure. The usual remedies were applied by two eminent physicians who had been attending him without success or benefit.

June 8. Put on the use of Buchu as the last case.

August 10. Can retain his urine for half an hour at a time; little or no pain in the bladder; strength and appetite improved. The sloughs detached from penis, sore healthy; a slight slough over the trochanter major, from pressure and debility; ordered nourishing diet and to continue the Buchu.

August 20 (Reported by Dr. Cumming.) In every respect better; can now retain his urine for two or three hours at a time; no uneasiness in the bladder. For some days past sitting up; looks greatly improved. Tongue, pulse, and bowels natural. Paralytic affections of lower extremities as before.

August 30. At his work as a watchmaker. Can retain urine for four or five hours; health good; limbs much stronger.

January 8. Continues as last reported and is entirely recovered.

In dyspepsia it appears to be a valuable auxiliary to other medicines: I had an opportunity of meeting with a case of gravel, of the uric acid kind, in a sedentary and

dyspeptic individual; the attack coming on whenever the digestive organs were deranged, and frequently lasting with much severity for three days, attended with violent pains shooting in the course of the ureter to the groins, testicles, and anterior part of the thigh; much fever, restlessness and irritability; any excess in drinking wine invariably produced an attack. He has been in the habit, for the last three years, of taking the Aqua Kali Caustica whenever attacked, and usually continued for a considerable time, in quantities of one ounce daily. In a late paroxysm he took it along with the Buchu: a white precipitate in the urine in large quantities resulted; he then omitted the alkali, and took the Buchu alone. He recovered rapidly; both the white and red precipitate ceased to recur, and he has had no attack of it since.

The above accounts of Dr. McDowell are entitled to the highest degree of confidence, being a man highly distinguished in the medical profession, and of large experience from the most extensive practice.

Numerous certificates and letters have been received from distinguished physicians in various parts of the United States, who have employed this medicine with great success, substantiating fully the evidence given by Dr. McDowell; and who speak in the highest confidence of its valuable properties. I will quote one or two for example.

The following is an extract of a letter from Dr. A. A. Evans, an eminent physician of Elkton, Maryland, whose observations are entitled to the fullest share of public confidence.

"The subject, a respectable widow lady, aged about forty years, had been under the care of an intelligent physician for something like eighteen months before I saw her. He had given her, as she stated to me, a variety of medicines without much relief. Indeed she had become materially worse than she was in the early part of her disease. When I visited her for the first time, she laboured under great uneasiness in the region of the bladder, with an almost incessant inclination to void urine. Whenever a few drops collected in the bladder she was compelled to arise from her bed and discharge it. There was, at times, a discharge of mucus with her urine. She was much exhausted by the irritation of the disease and want of sleep; had but little appetite, and a quick irritable pulse. She had in the course of her disease become afflicted with leucorrhœa, and a partial prolapsus uteri, which were relieved by injections, a pessary, &c., but the difficulty in the urinary apparatus continued unmitigated.

"After trying all the remedies which my reading and experience suggested with but temporary relief, her patience, as well as my own, (she lived a considerable distance from me,) became exhausted, and she determined to leave off all medicine for a while. Shortly after seeing her for the last time, you sent me one of your bottles of the Buchu, which I sent her by the first opportunity, with a request that she would give it a trial. She did so, and when the bottle was finished, she sent her son to inform me that the medicine had given her more relief than anything she had ever tried: but that she was not entirely well, and wished me to send her another bottle: not having any more on hand, I gave her your address, since which time I have not seen her, but heard some time back that she was up, and attending to the affairs of her family as usual before her disease. Yours with respect,

To Mr. G. W. Carpenter, "A. A. EVANS, M. D.,
July 24th, 1831. "Elkton, Maryland."

The following case is an extract of a letter from Dr. W. S. Wallace, an intelligent physician of an extensive practice at Earle, Lancaster County, Pennsylvania.

"Mr. ————, aged twenty-eight years, has laboured under a disease of the bladder and urinary passages for upwards of two years; the symptoms were a difficulty in passing urine, accompanied with great pain, the urine passed by dribble, sometimes almost amounting to a suppression; occasionally a sharp lancinating pain in the prostate gland, but no enlargement could be felt; with irritability of the rectum. Having tried many remedies without any benefit, I was induced to try your Compound Fluid Extract of Buchu, and am happy to say with the most decided benefit. Before using three bottles of it, the patient could urinate freely without pain, and all the above symptoms entirely gone, which has not been the case before with him since the commencement of the disease. I am decidedly of the opinion that it is one of the most powerful diuretic medicines I am acquainted with. Respectfully yours,

To Mr. George W. Carpenter, "W. S. WALLACE, M. D.
August 1st, 1831. "Earle, Lancaster Co., Penna."

The following letter is from Calvin Jones, a respectable physician of North Carolina, now residing in Tennessee:—

Bolivar, W. Tennessee, Sept. 15, 1835.

Sir:—I have just received a testimonial in favour of one of your preparations, that

I think in justice to you and those afflicted with what has been, heretofore, commonly considered an incurable disease, ought to be communicated. The letter received a few days ago, of which I give you an extract, is from my father-in-law, Major William Williams, of Warren County, N. C. He is about 74 years of age, and his complaint has been, I think, of some eight or nine years' standing. After premising this, I will give you the rest in his own words.

"My old complaint has been worse for the last year, so that I have been unable to ride, even in a carriage, except, that I did two or three times, in very great misery, to see my brother Henry, in his last illness. The pain of voiding urine, to which I was urged every twenty or thirty minutes, was very great. Doctors ——— and ——— attended me, but without advantage. Dr. Philip C. Pope, of Warrenton, hearing of my distressed situation, sent me a bottle of G. W. Carpenter's Compound Fluid Extract of Buchu, which seemed to act as a charm. It gave me great relief the first night, and in three or four days I was quite easy. The first bottle appeared to make a cure, so that I was not up more than once or twice in a night and that without pain. I have two or three times felt something like a return of the complaint, but on having recourse to the medicine, it has relieved me immediately. I have now some discharges of very fine gravel, but know not that I ought to consider it a disease. I have quite regained my appetite, and nearly my flesh and spirits, but am rather weak from want of exercise, which I am still afraid to indulge in, as it always did me great injury."

The venerable and learned Judge ———, of Jonesboro', in this state, (editor of the Tennessee Farmer,) suffers very nearly as Major Williams represents himself to have done. I shall, this day, write to him, giving him the foregoing extract, in hopes that his useful life may be prolonged, and rendered comfortable by having recourse to the same remedy, which I shall not fail strongly to recommend, if, indeed, anything is necessary to be added to the force of the extract itself.

Wishing you every success that your science and enterprise so justly entitle you to, I am very respectfully, your obedient servant, CALVIN JONES.

Mr. Geo. W. Carpenter.

P. S.—If you wish to make any use of Major Williams' case, you will desire to know the authority on which it rests. He is known to most persons living on the waters of the Roanoke, and your correspondent was once, and for many years, a practitioner of medicine in Raleigh, North Carolina. Reference to both is easy. Dr. Pope is an eminent physician in Warrenton, N. C., and can, no doubt, confirm and add to these details.

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THE

AMERICAN JOURNAL

OF THE

MEDICAL SCIENCES.

EDITED BY

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SURGEON TO WILLS HOSPITAL,

PHYSICIAN TO THE PHILADELPHIA ORPHAN ASYLUM, &c. &c.

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